

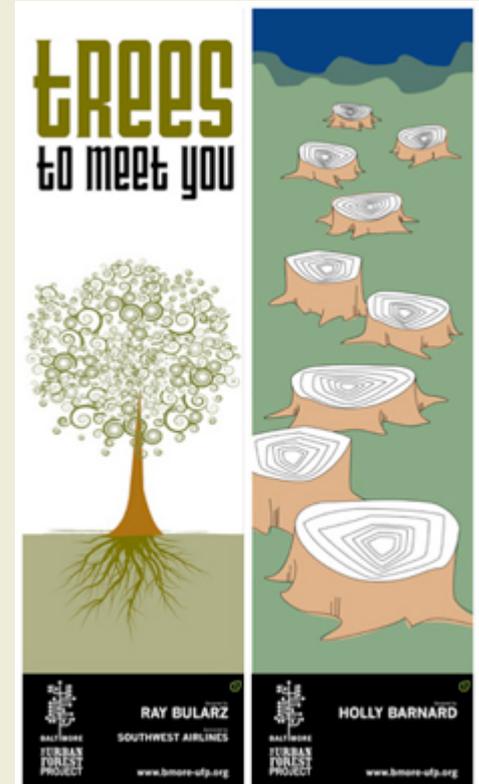
Using LARIAC Data for Urban Forestry Research and Practice



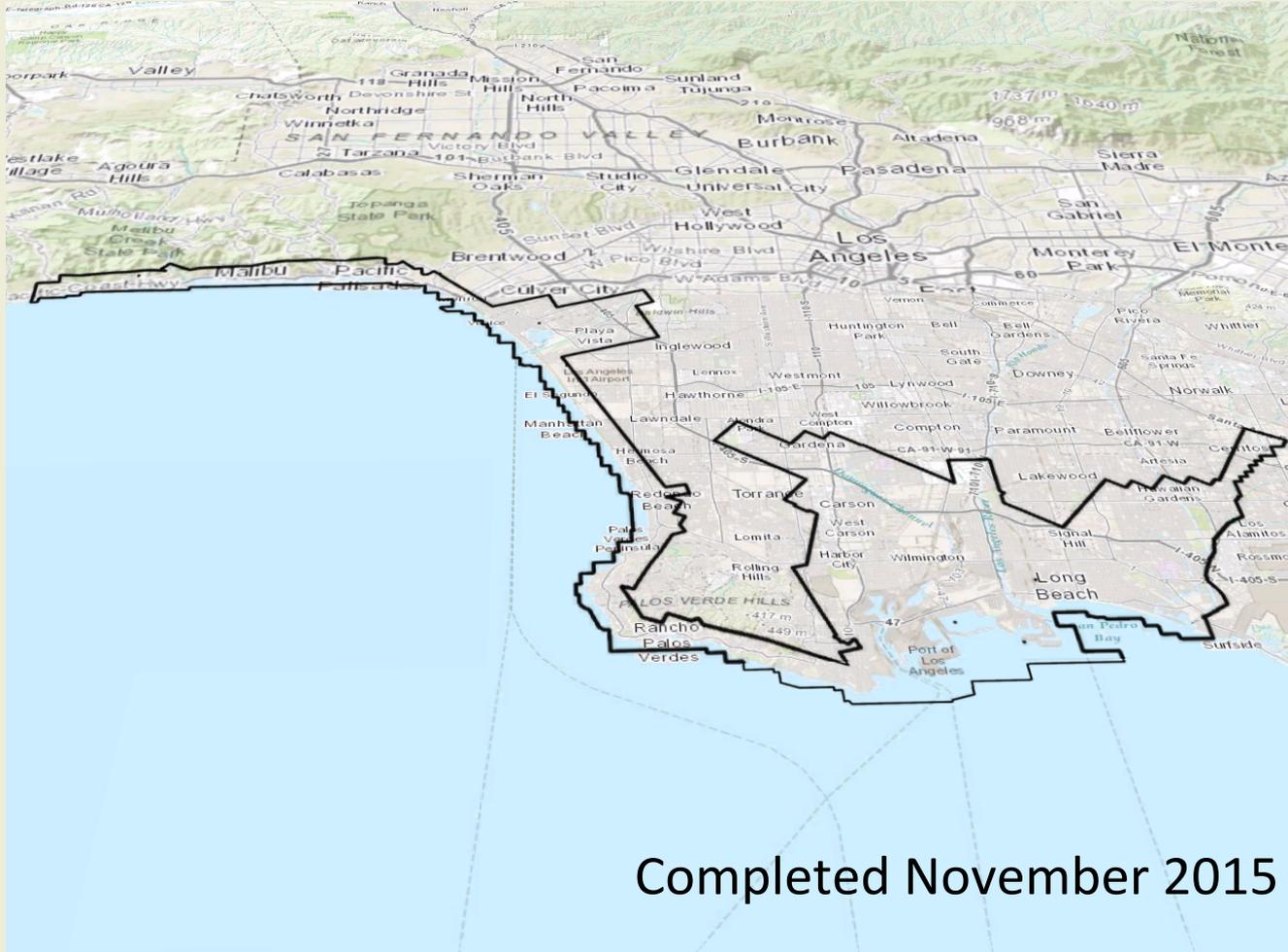
Dr. Michele Romolini, Director of Research
Center for Urban Resilience
Loyola Marymount University
January 28, 2016

The Los Angeles Tree Canopy Assessment & Prioritization Project

- Collaboration with University of Vermont Spatial Analysis Lab and Savatree – who have completed over 75 tree canopy assessments nationwide
- Analysis of aerial imagery & LIDAR data can provide information to aid in tree planting plans
- Tree canopy assessments offer the ability to determine possible and priority planting sites across multiple scales
- Understanding land cover distribution can help address equity & social vulnerability concerns



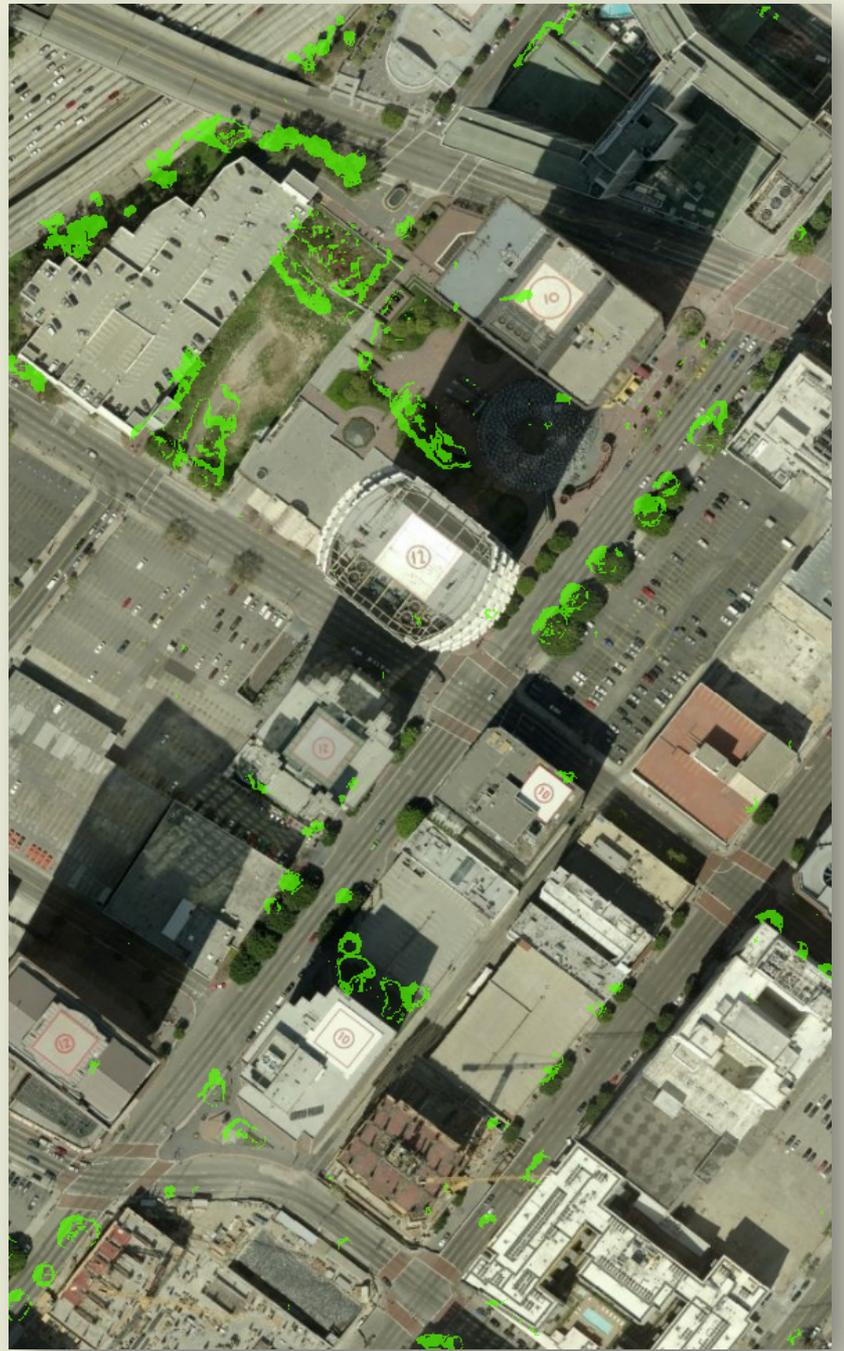
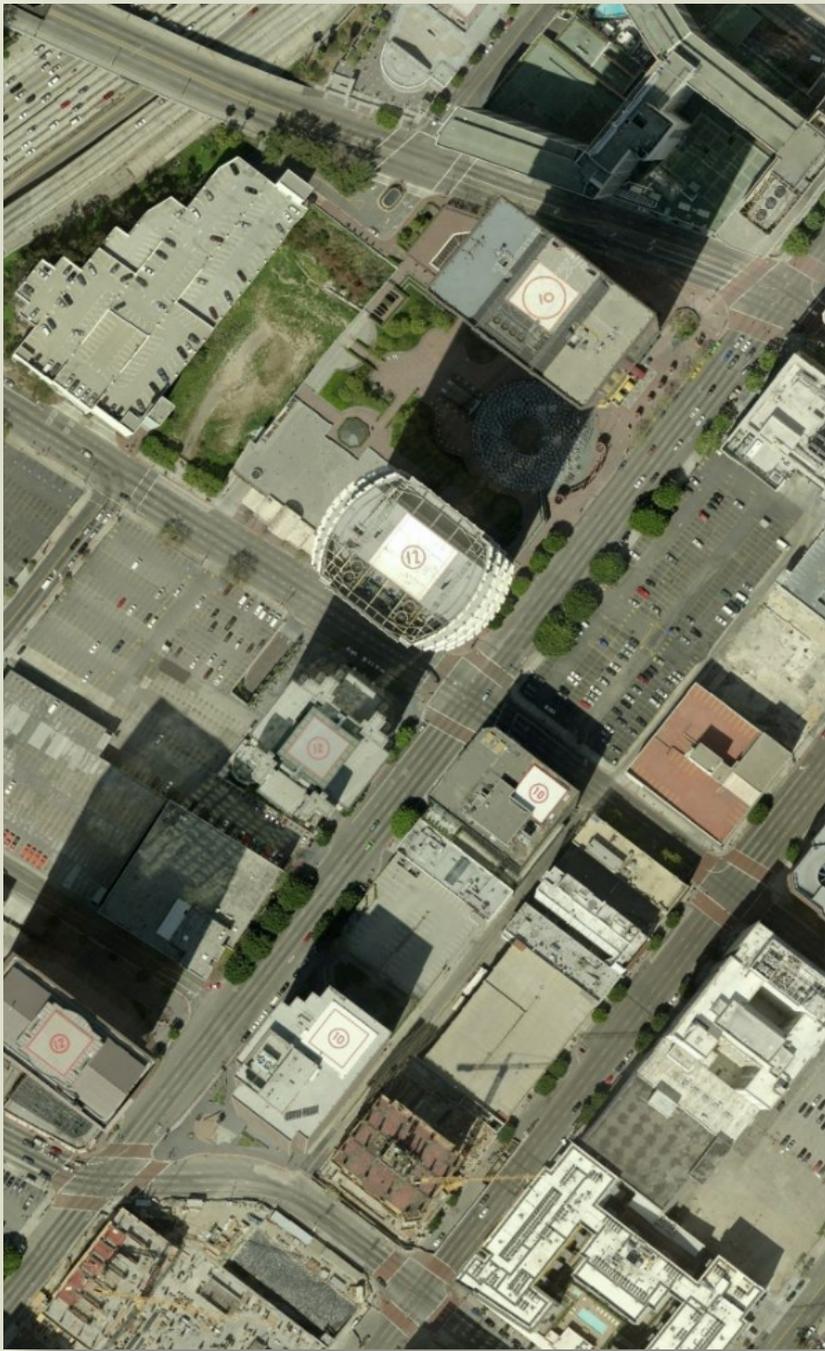
Phase 1, Coastal L.A.



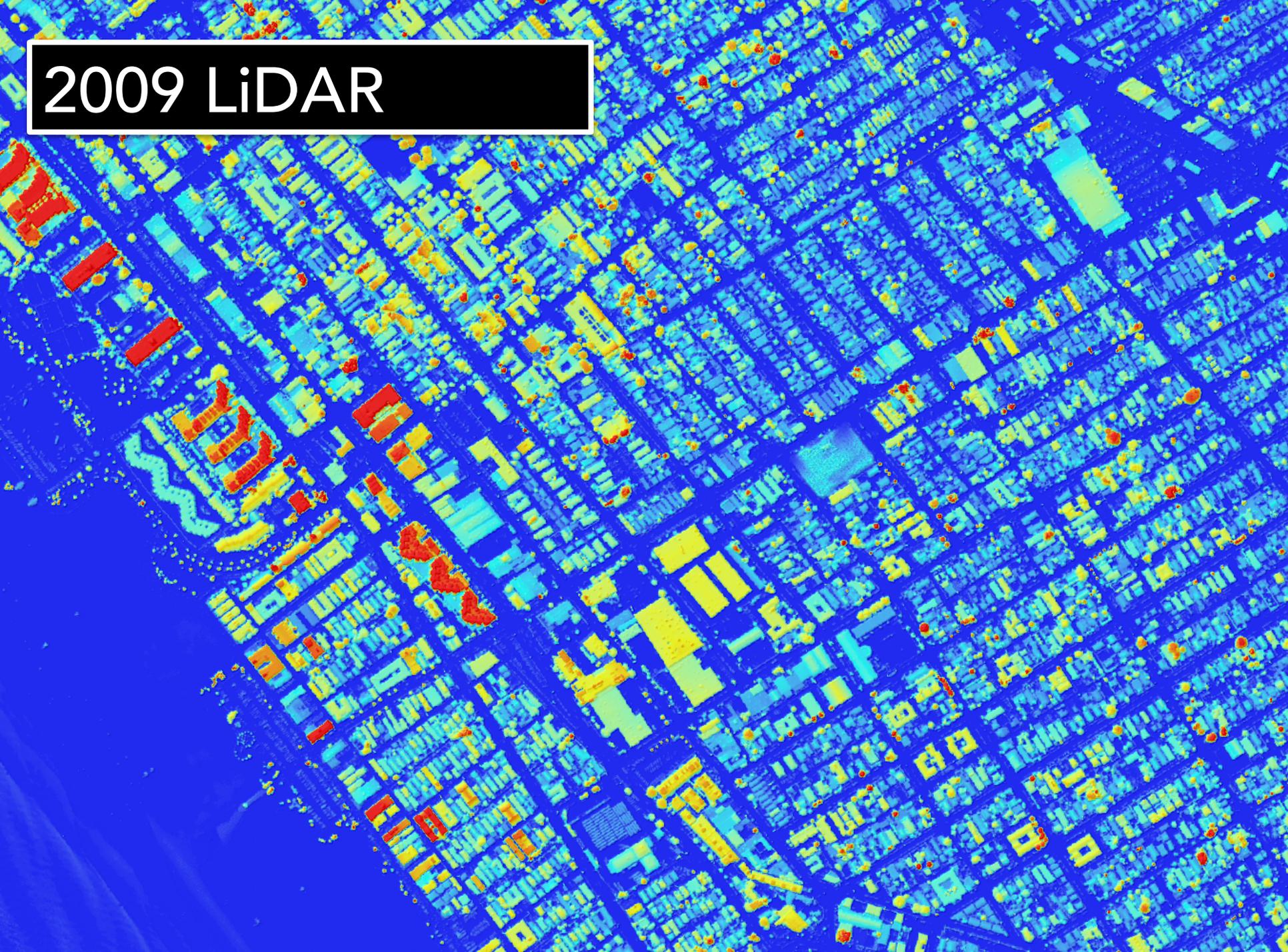
Completed November 2015

LAND COVER MAPPING

Data > Information



2009 LiDAR



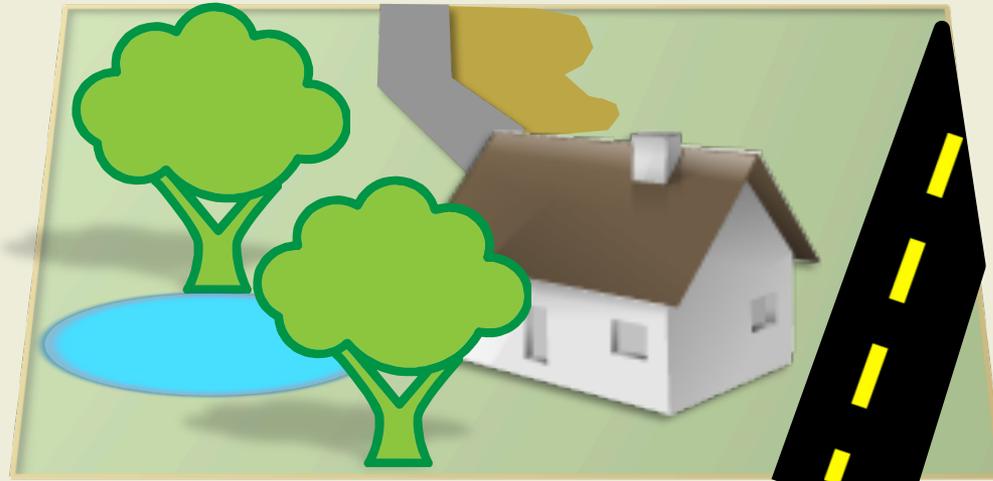
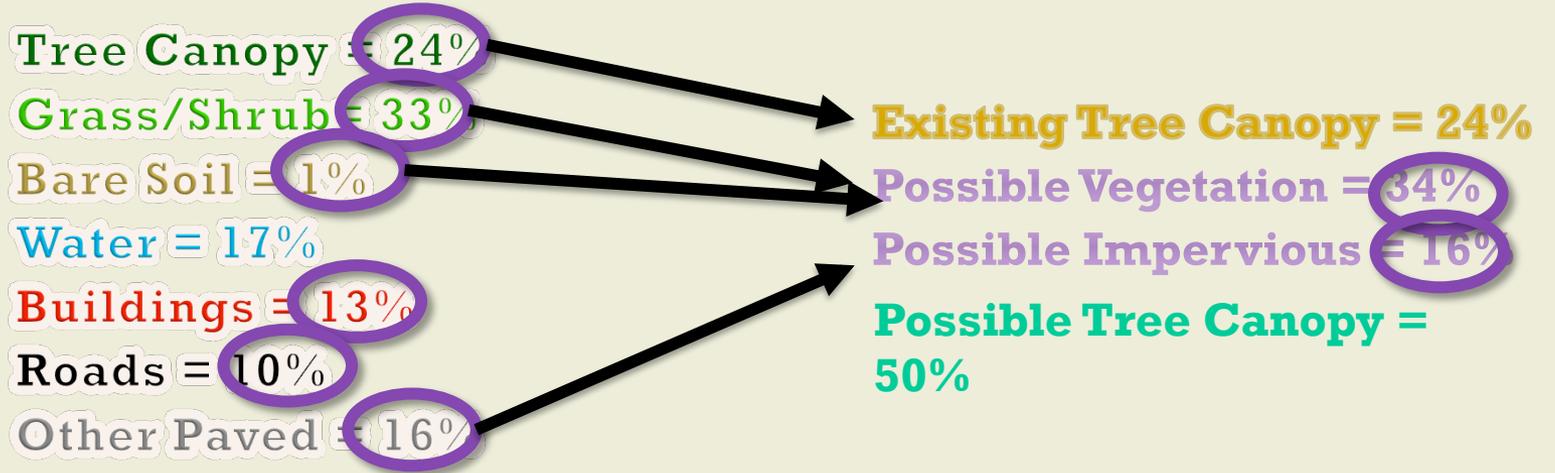
2014 Imagery

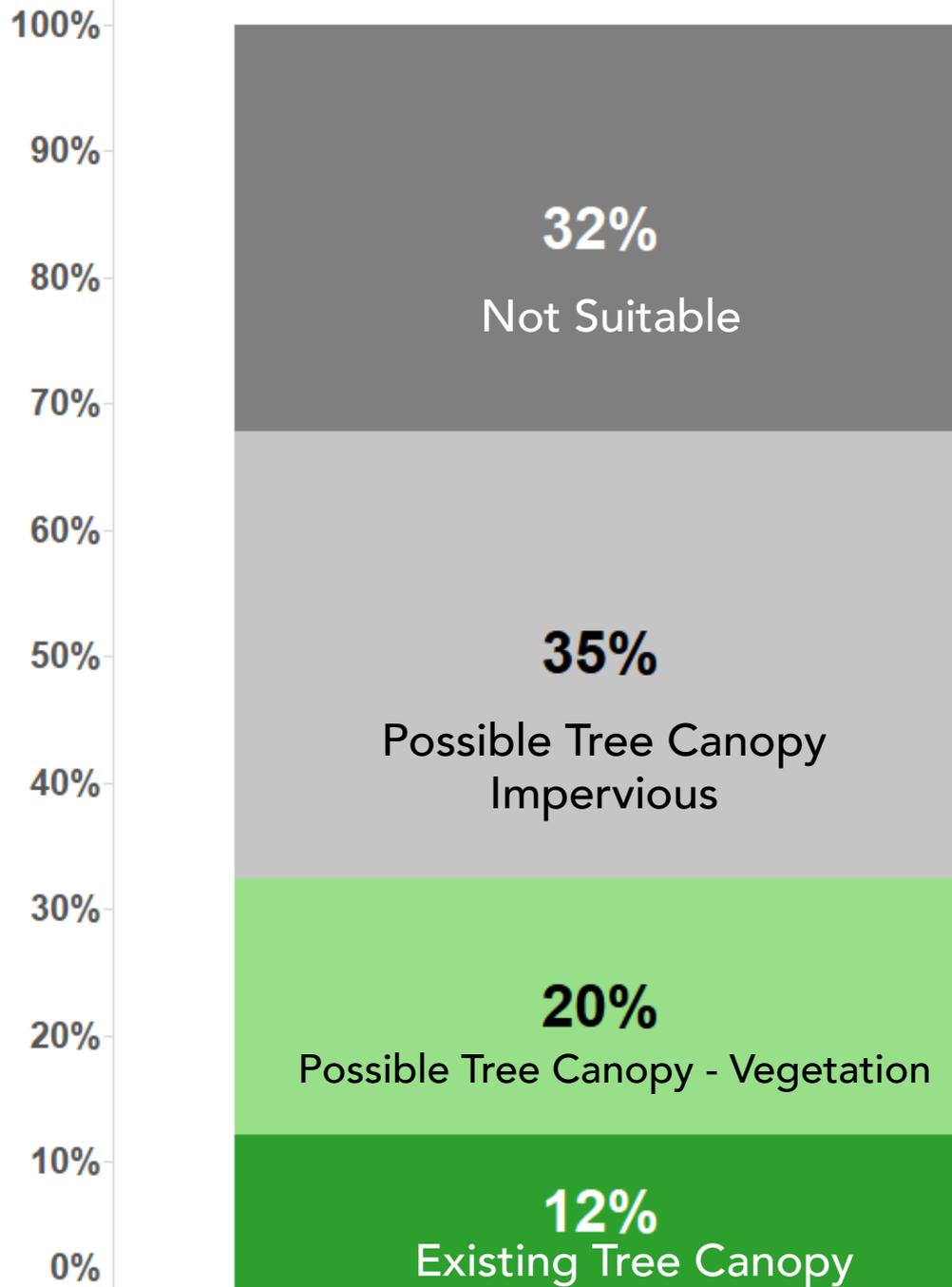


2014 Land Cover



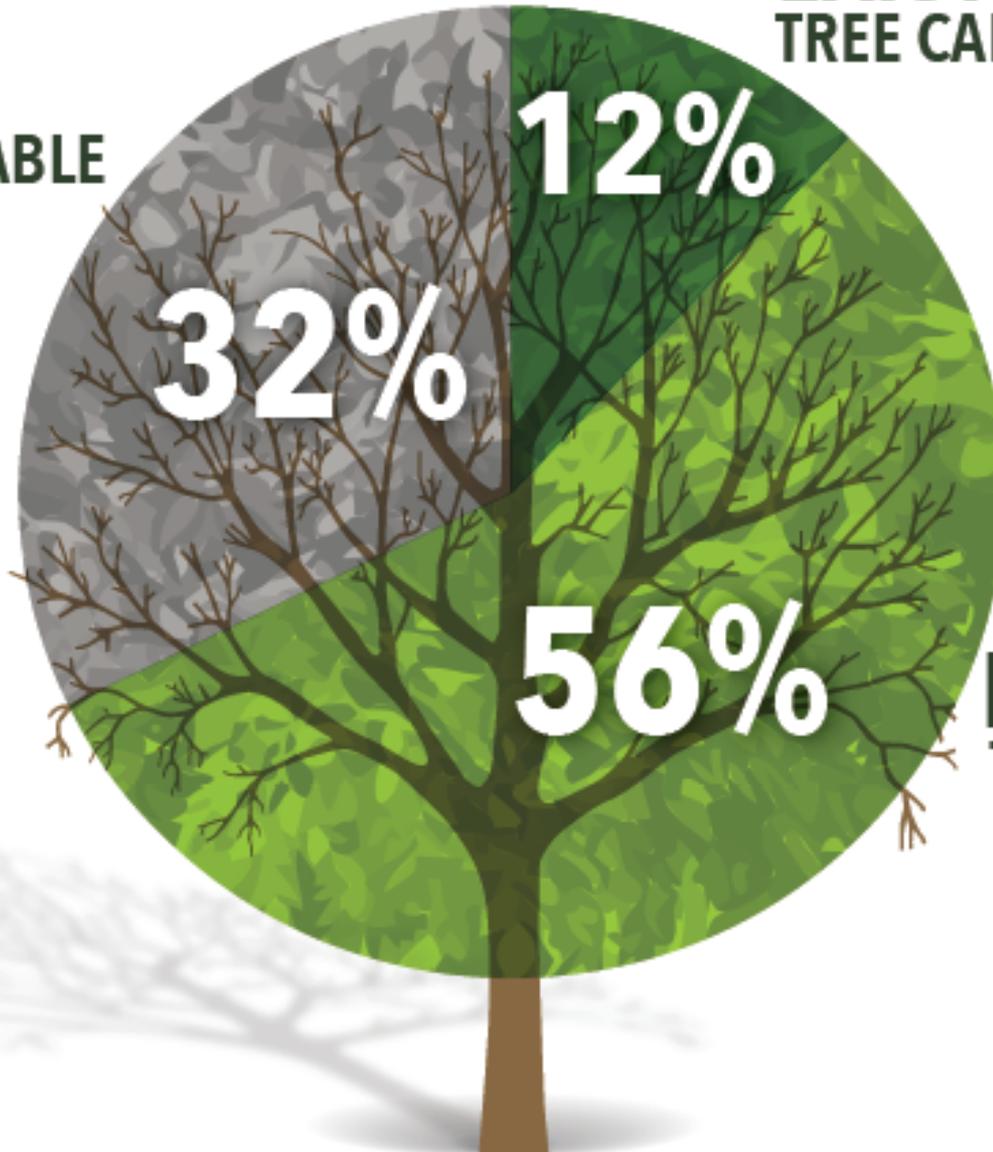
TREE CANOPY METRICS





**EXISTING
TREE CANOPY**

NOT SUITABLE



32%

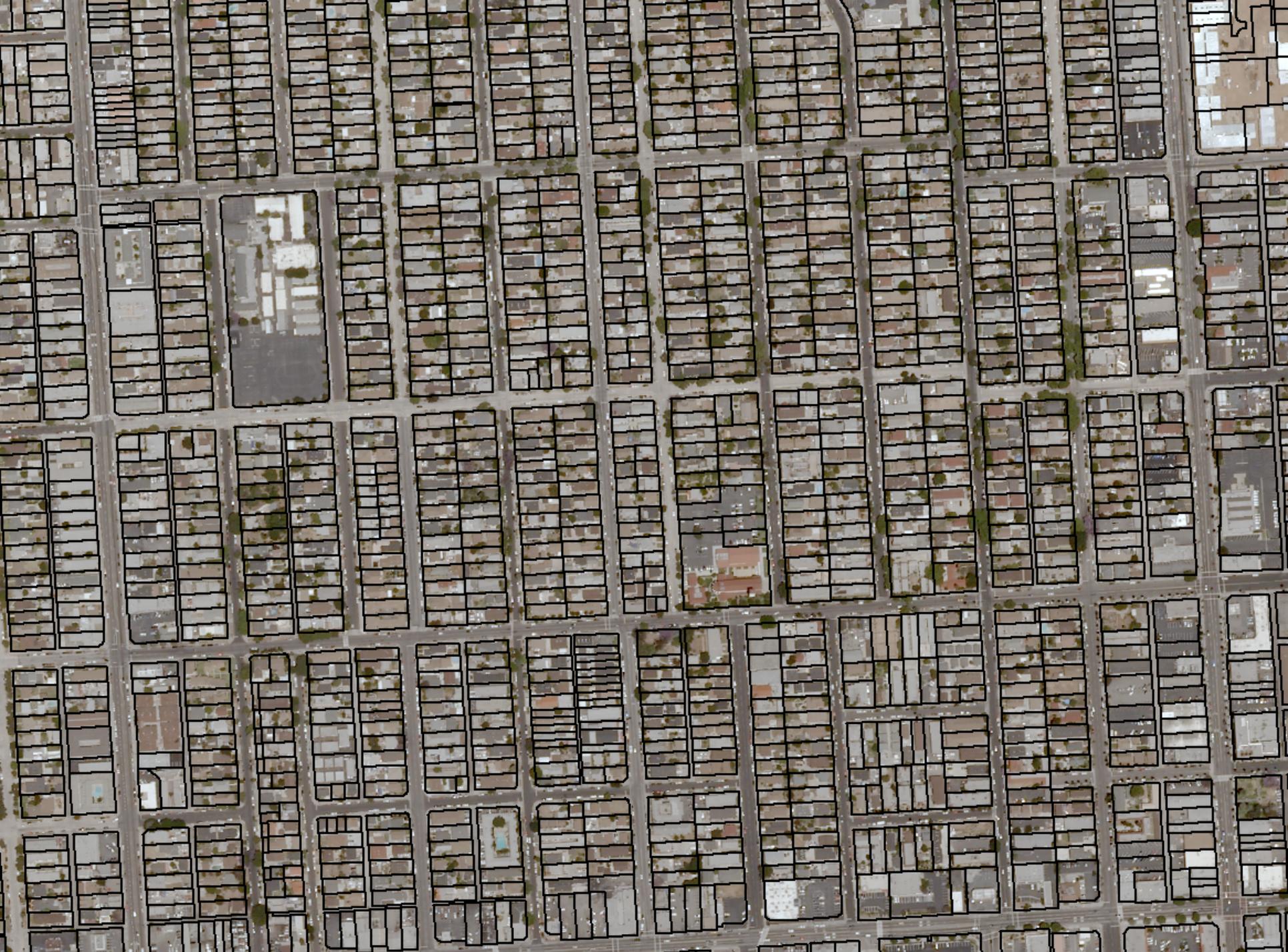
12%

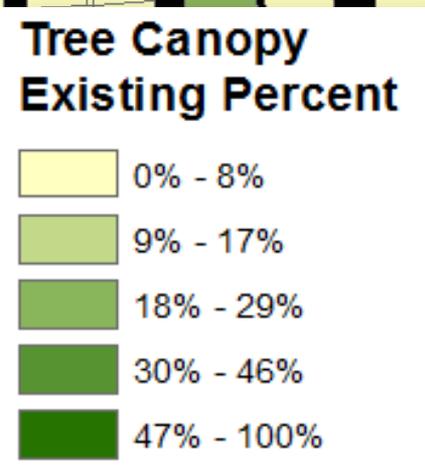
56%

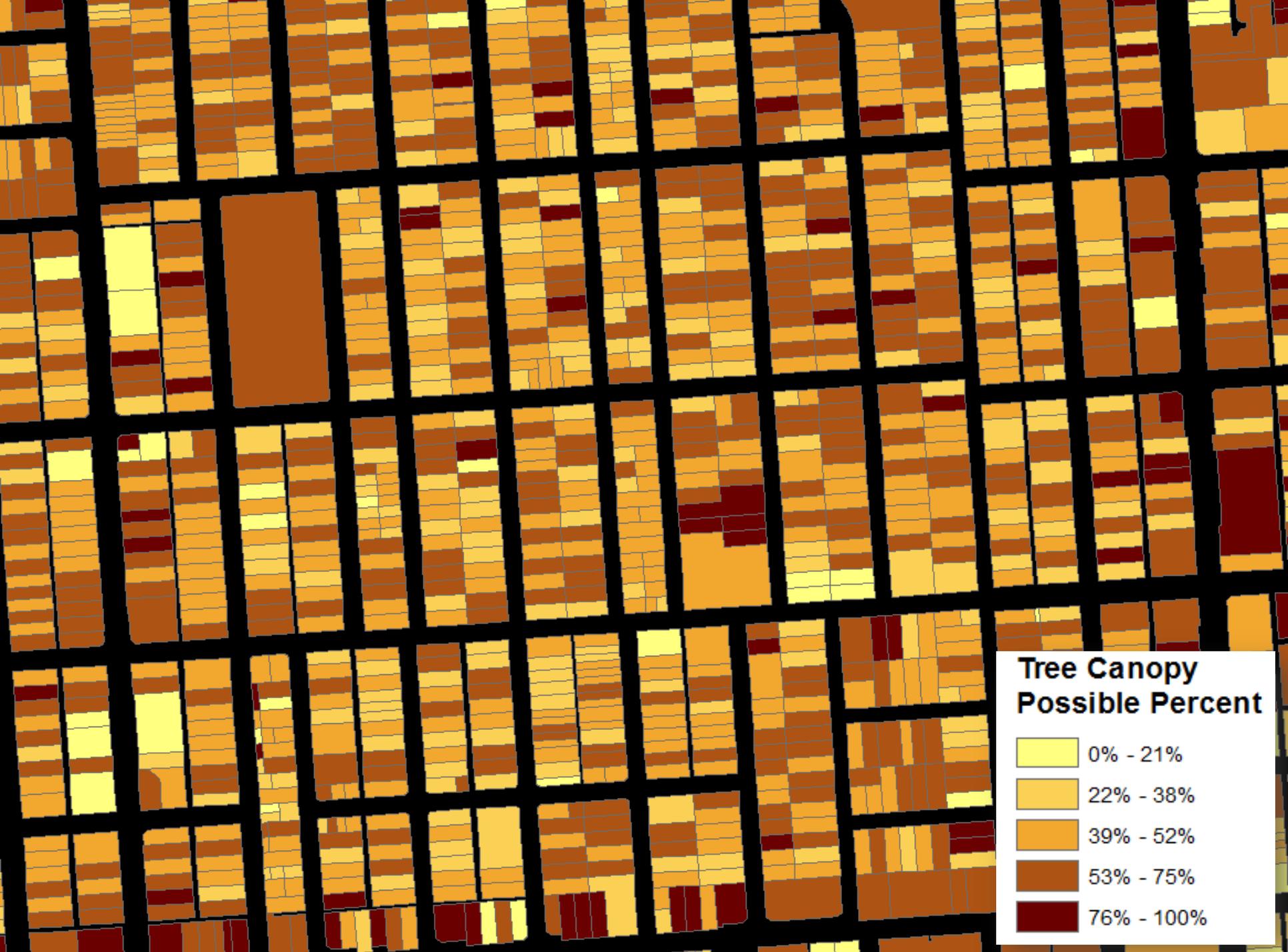
**POSSIBLE
TREE CANOPY**

PARCELS

Tree Canopy Metrics

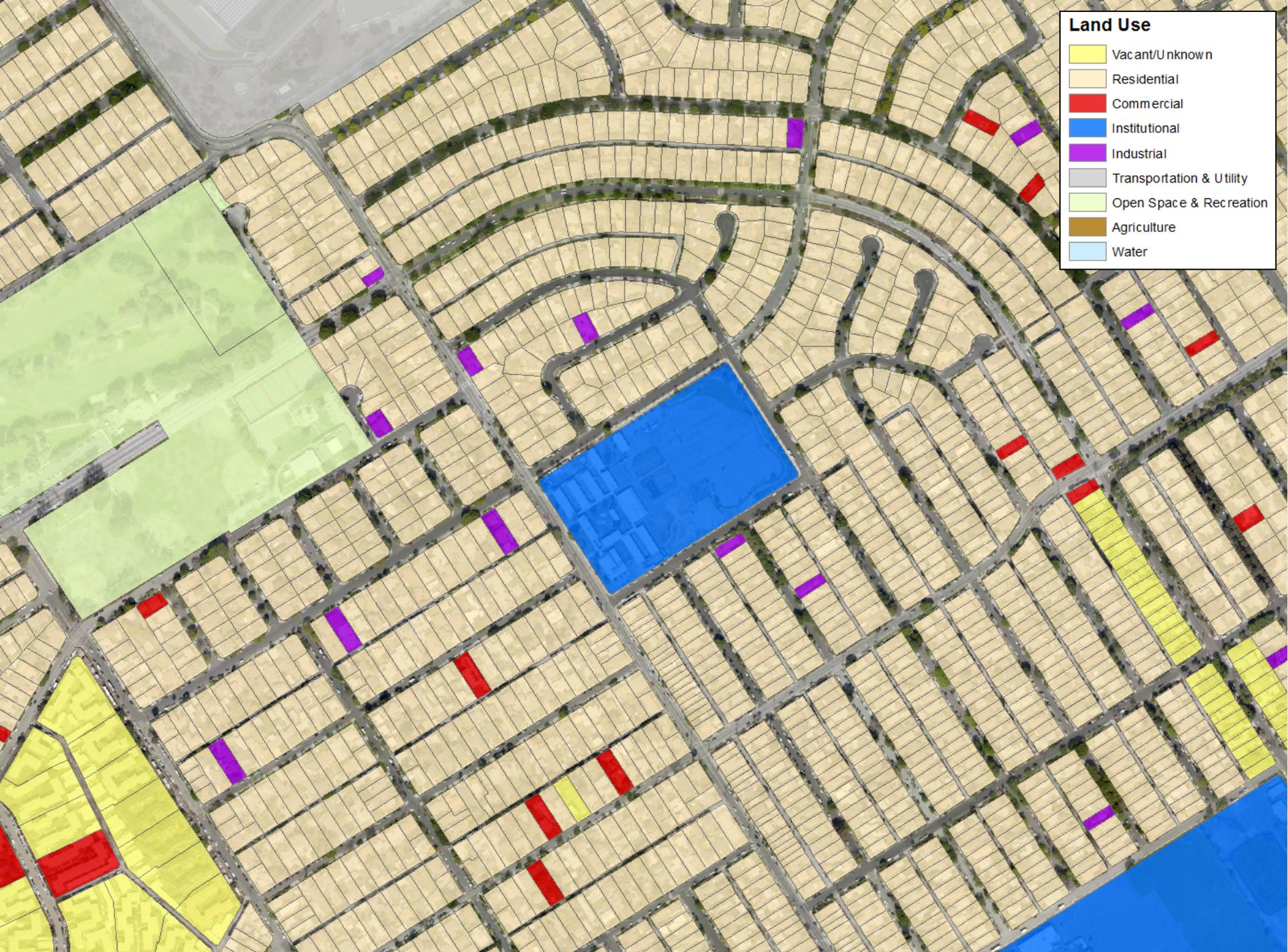






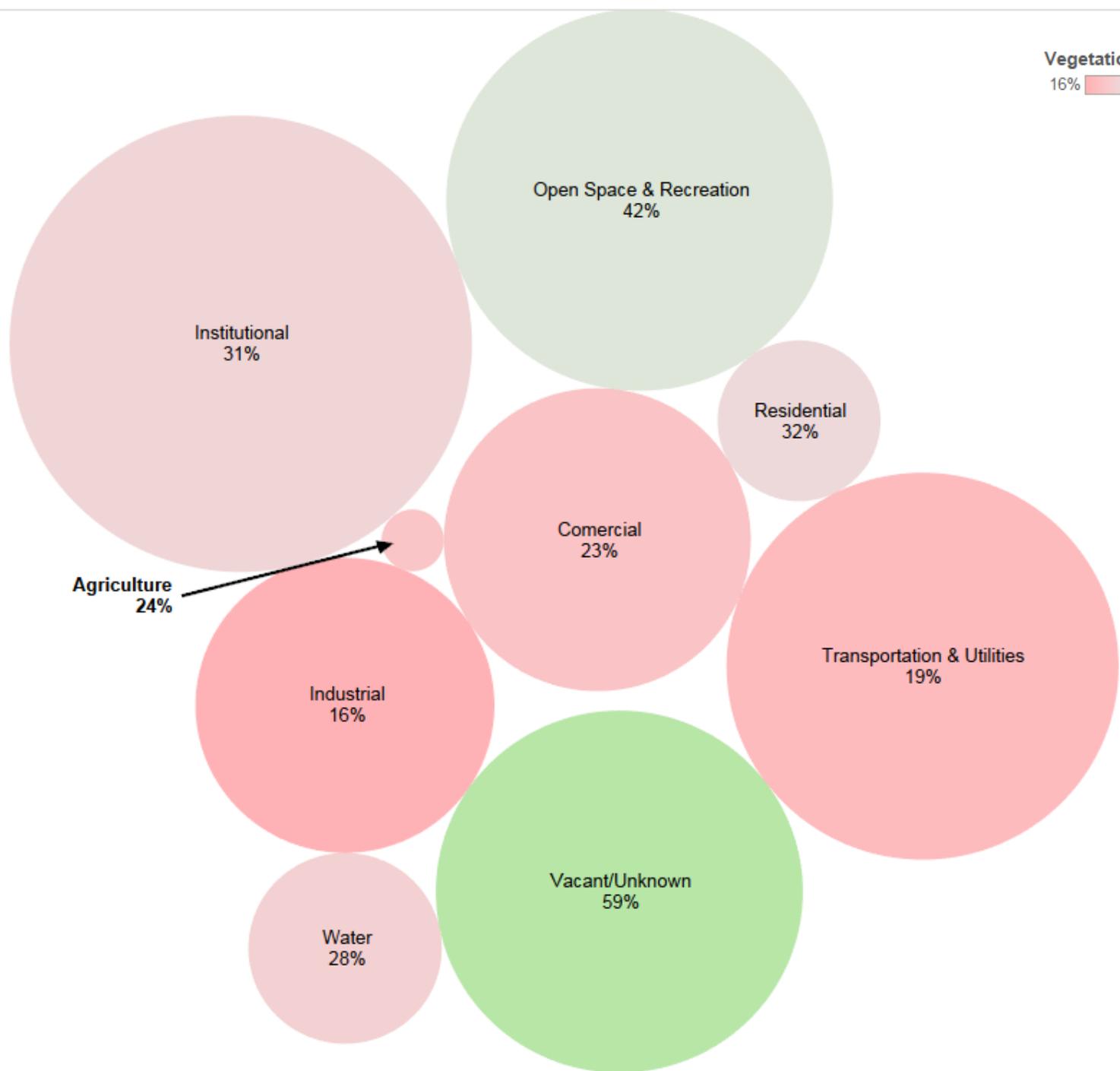
LAND USE

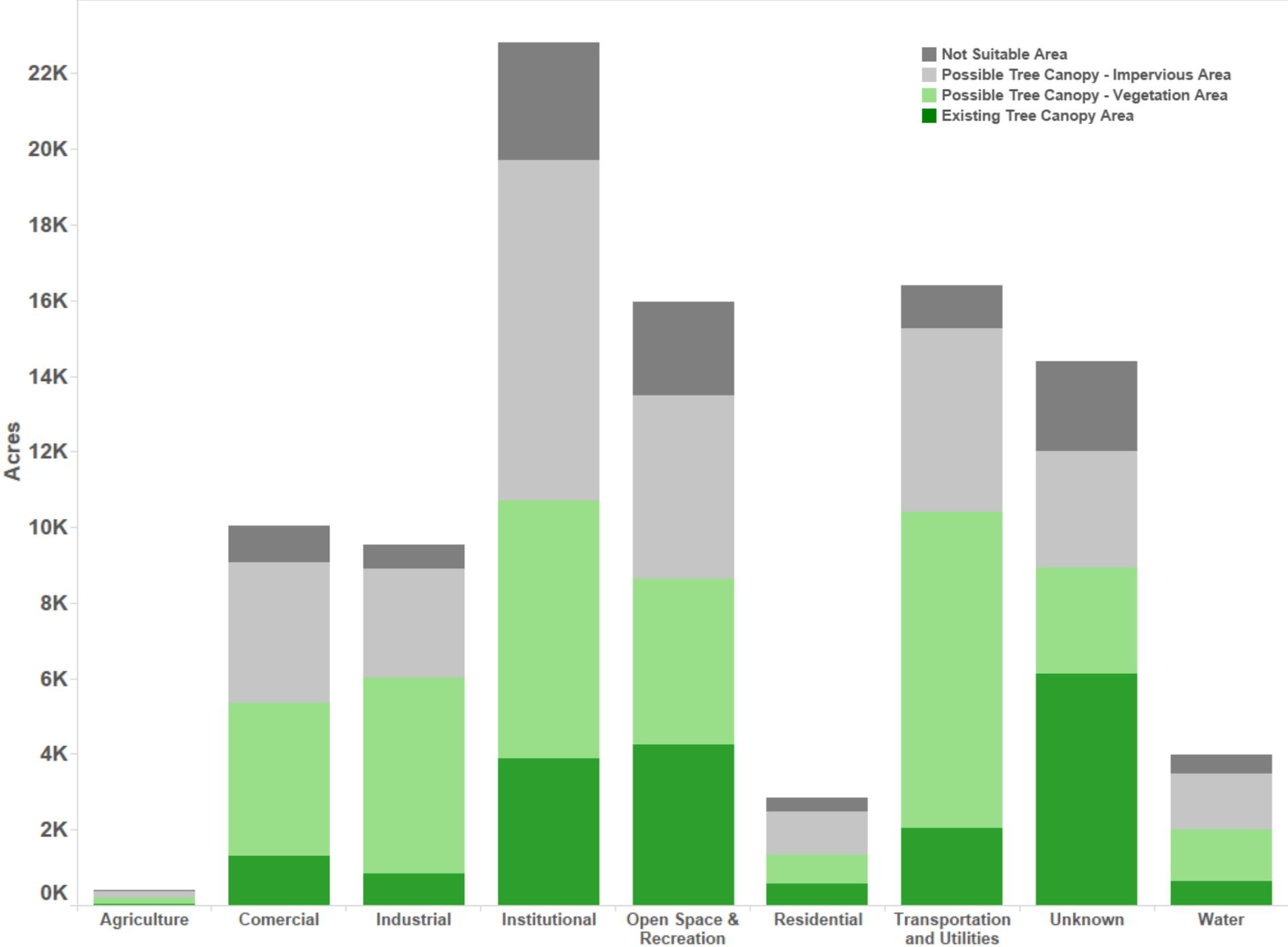
Tree Canopy Metrics

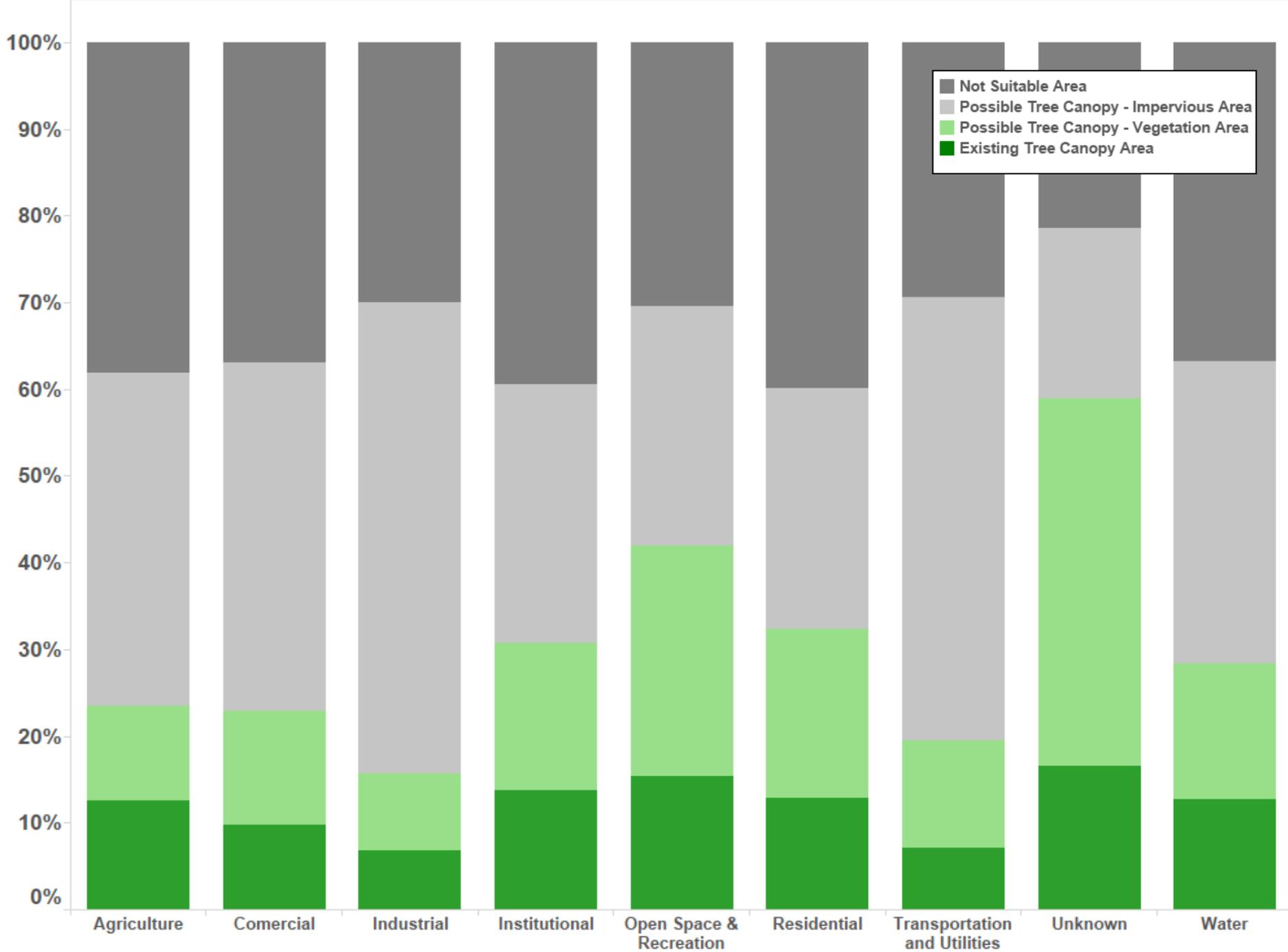


Land Use	
Yellow	Vacant/Unknown
Tan	Residential
Red	Commercial
Blue	Institutional
Purple	Industrial
Grey	Transportation & Utility
Light Green	Open Space & Recreation
Brown	Agriculture
Light Blue	Water

Vegetation %
16% 59%

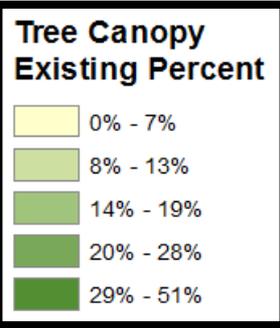
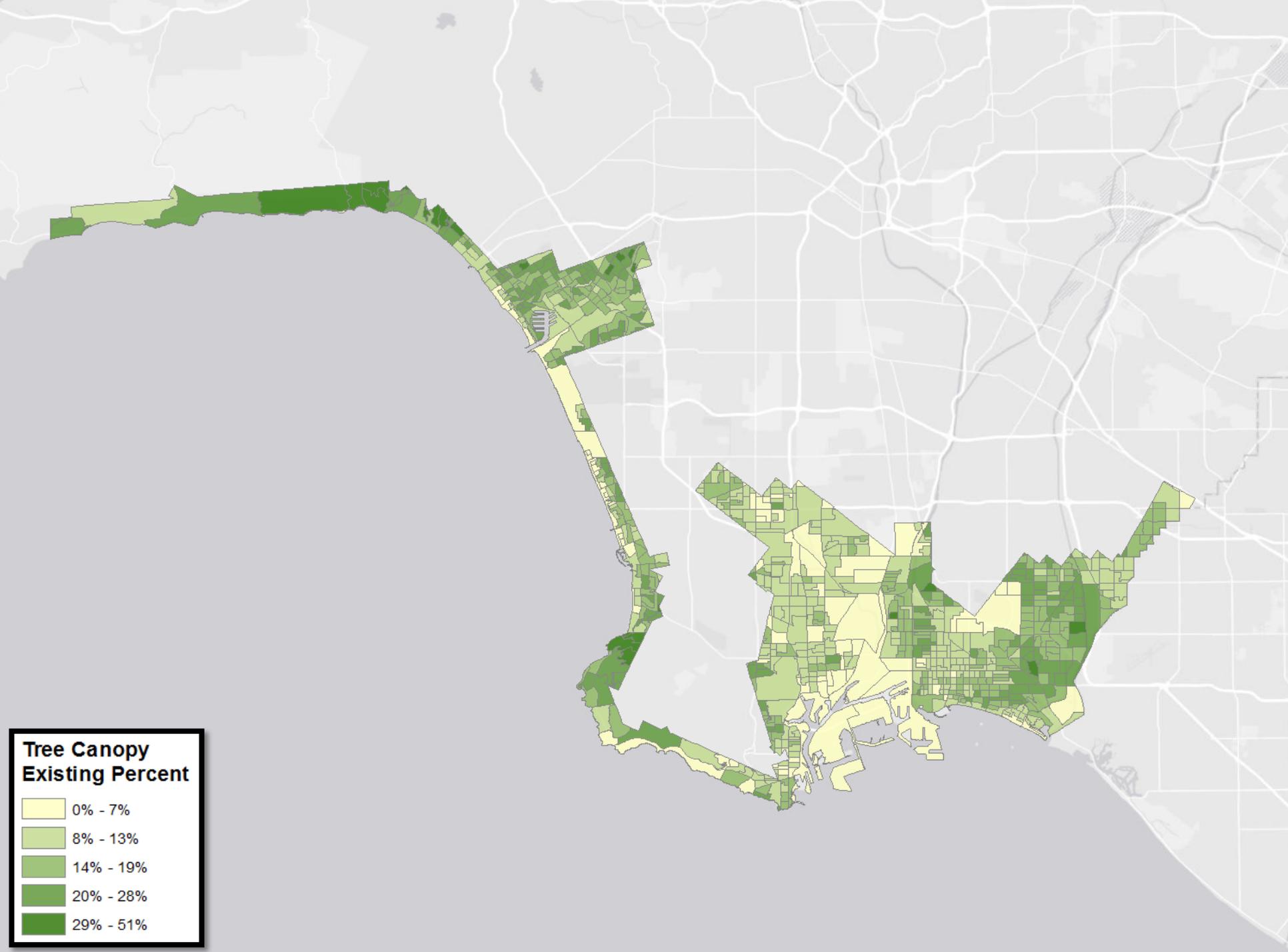


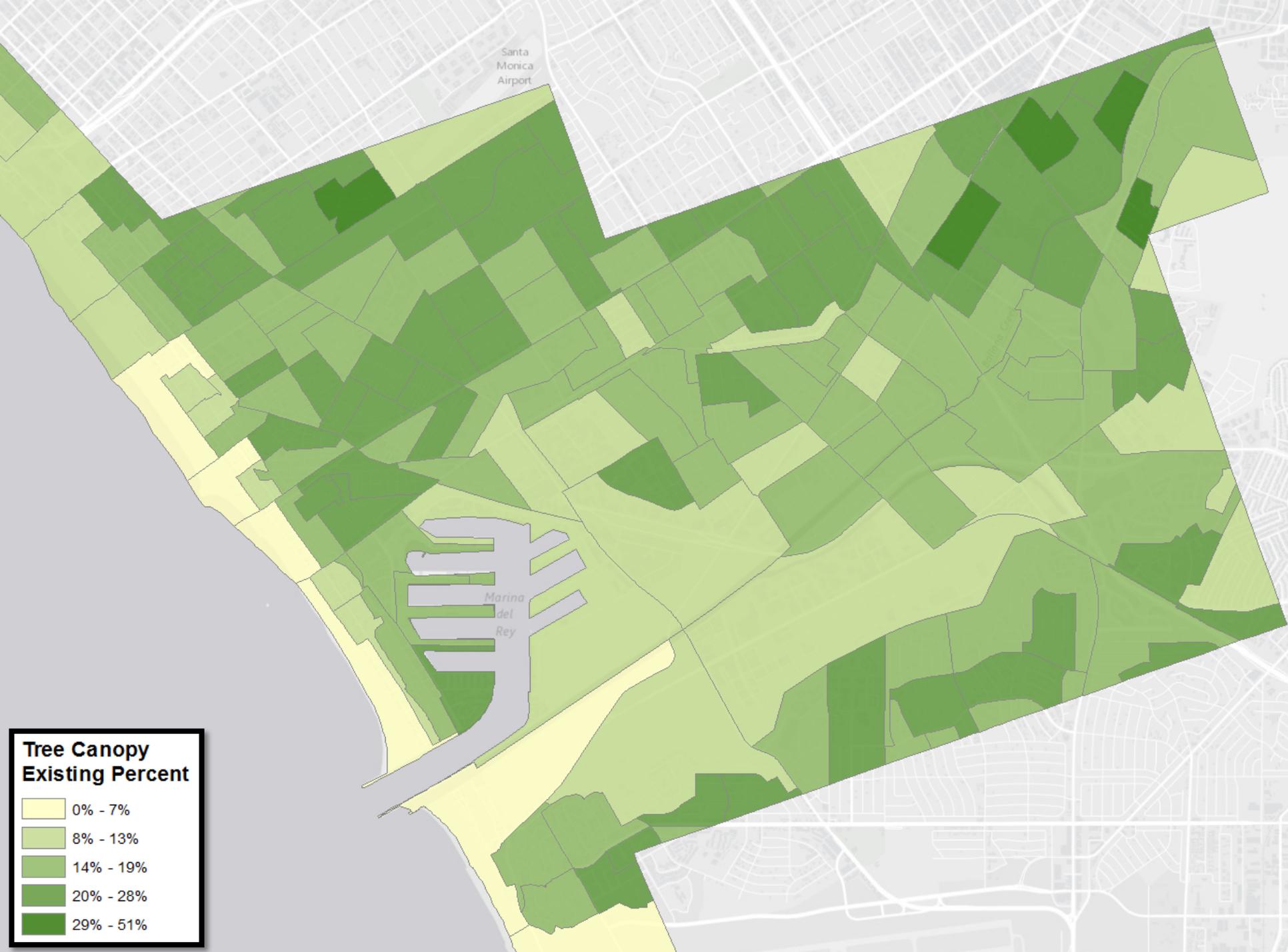




CENSUS BLOCK GROUPS

Tree Canopy Metrics





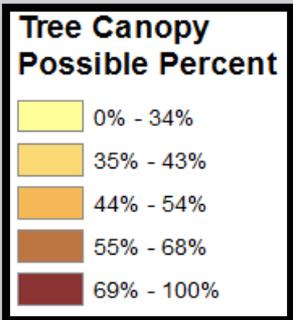
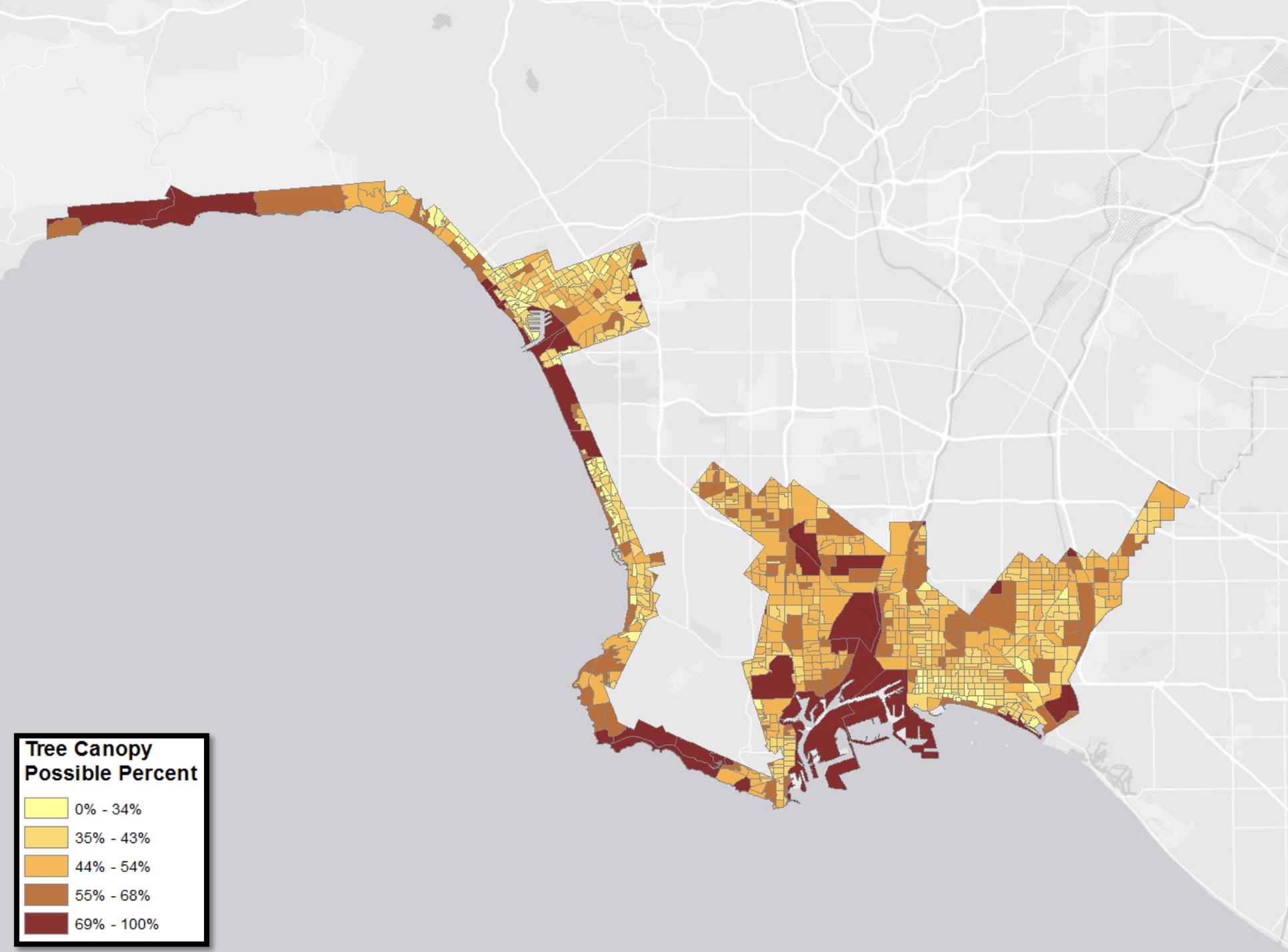
Santa Monica Airport

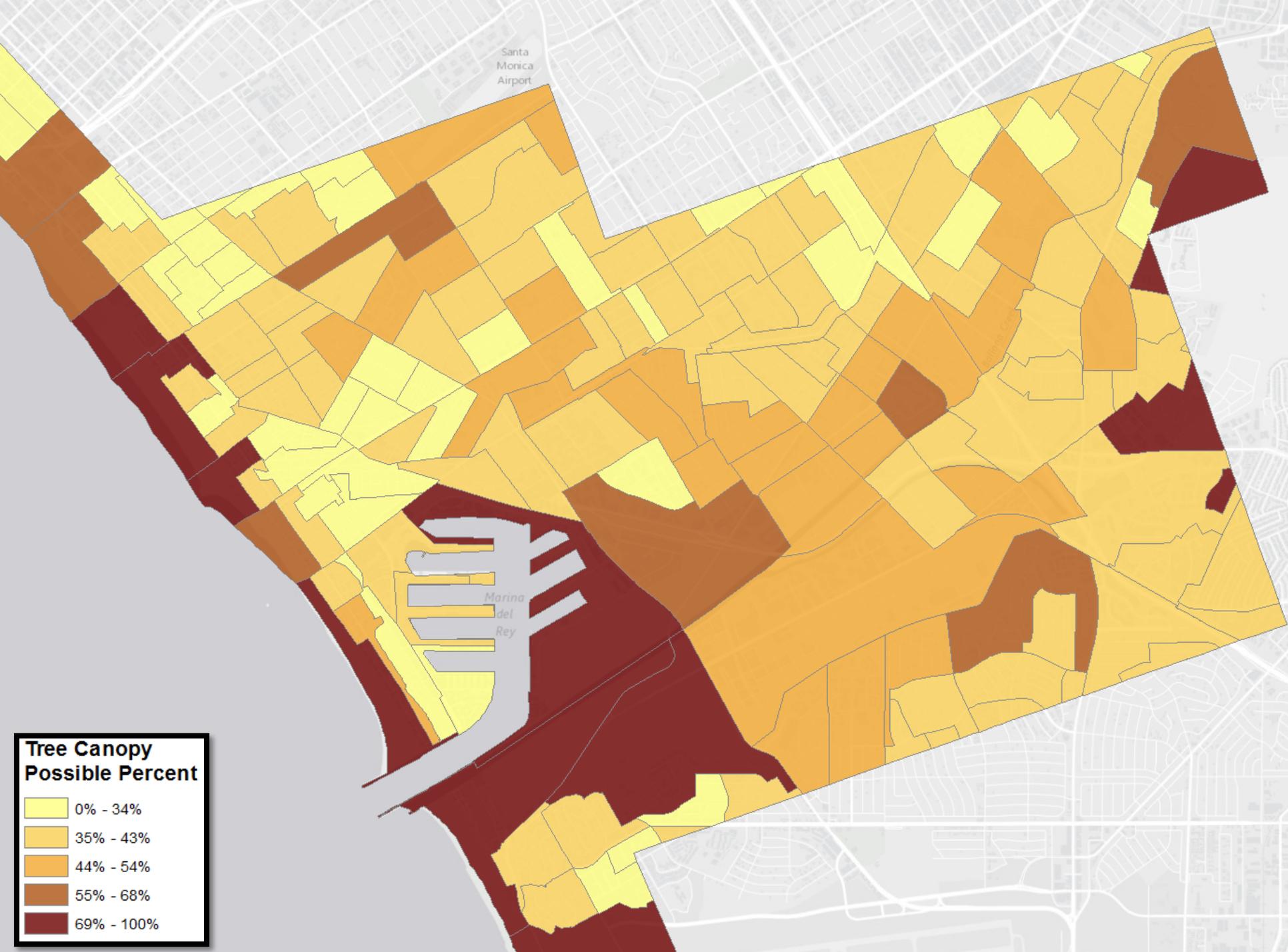
Marina del Rey

Marina Oaks

Tree Canopy Existing Percent

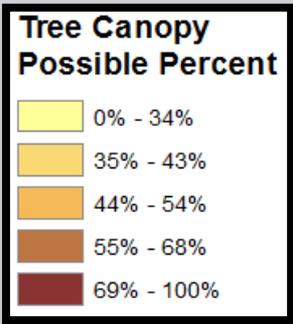
- 0% - 7%
- 8% - 13%
- 14% - 19%
- 20% - 28%
- 29% - 51%





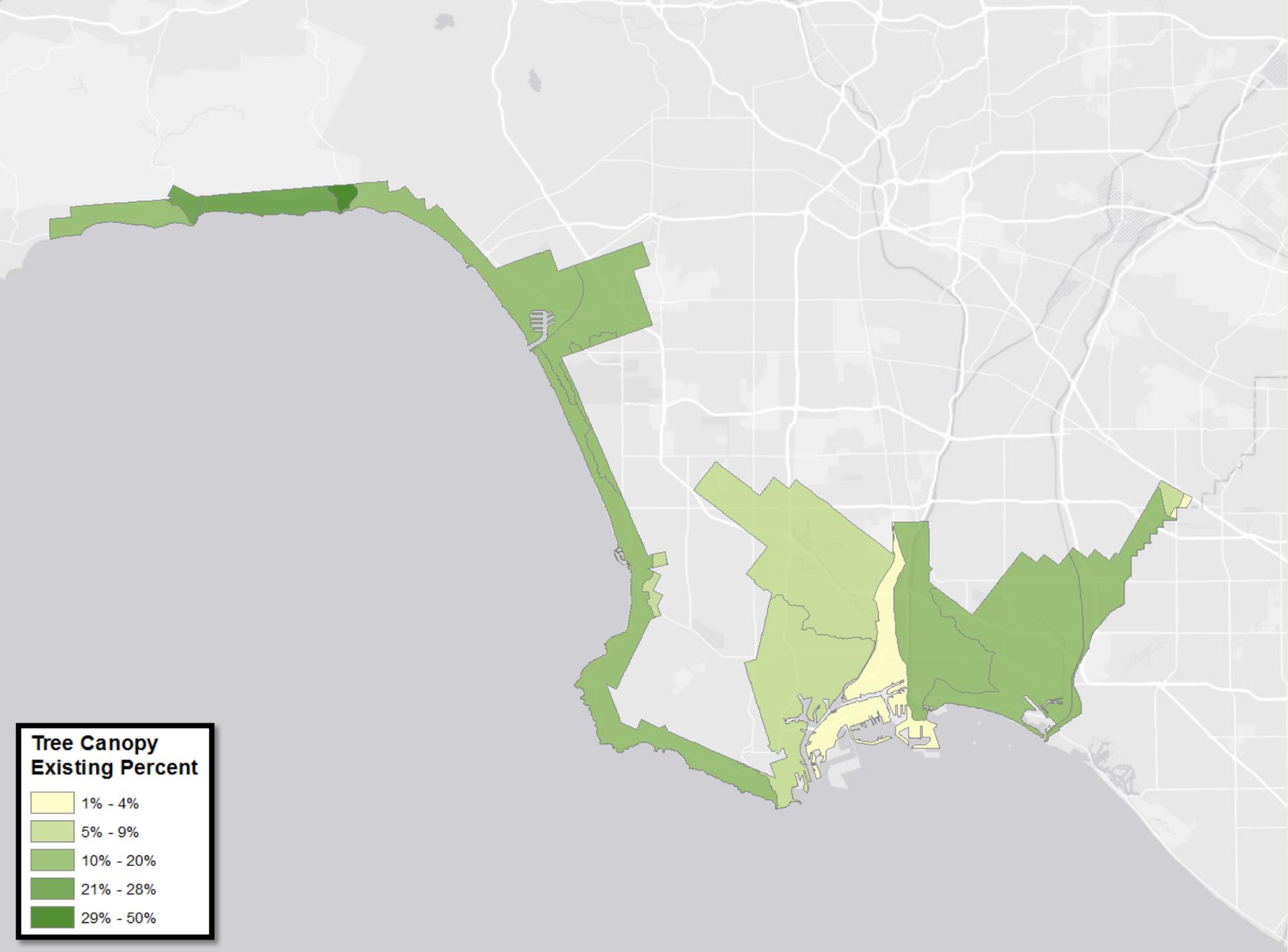
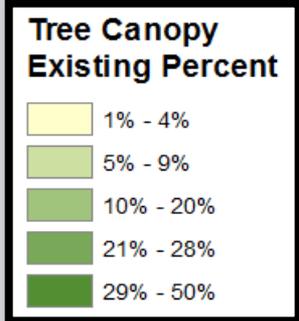
Santa
Monica
Airport

Marina
del
Rey



WATERSHEDS

Tree Canopy Metrics

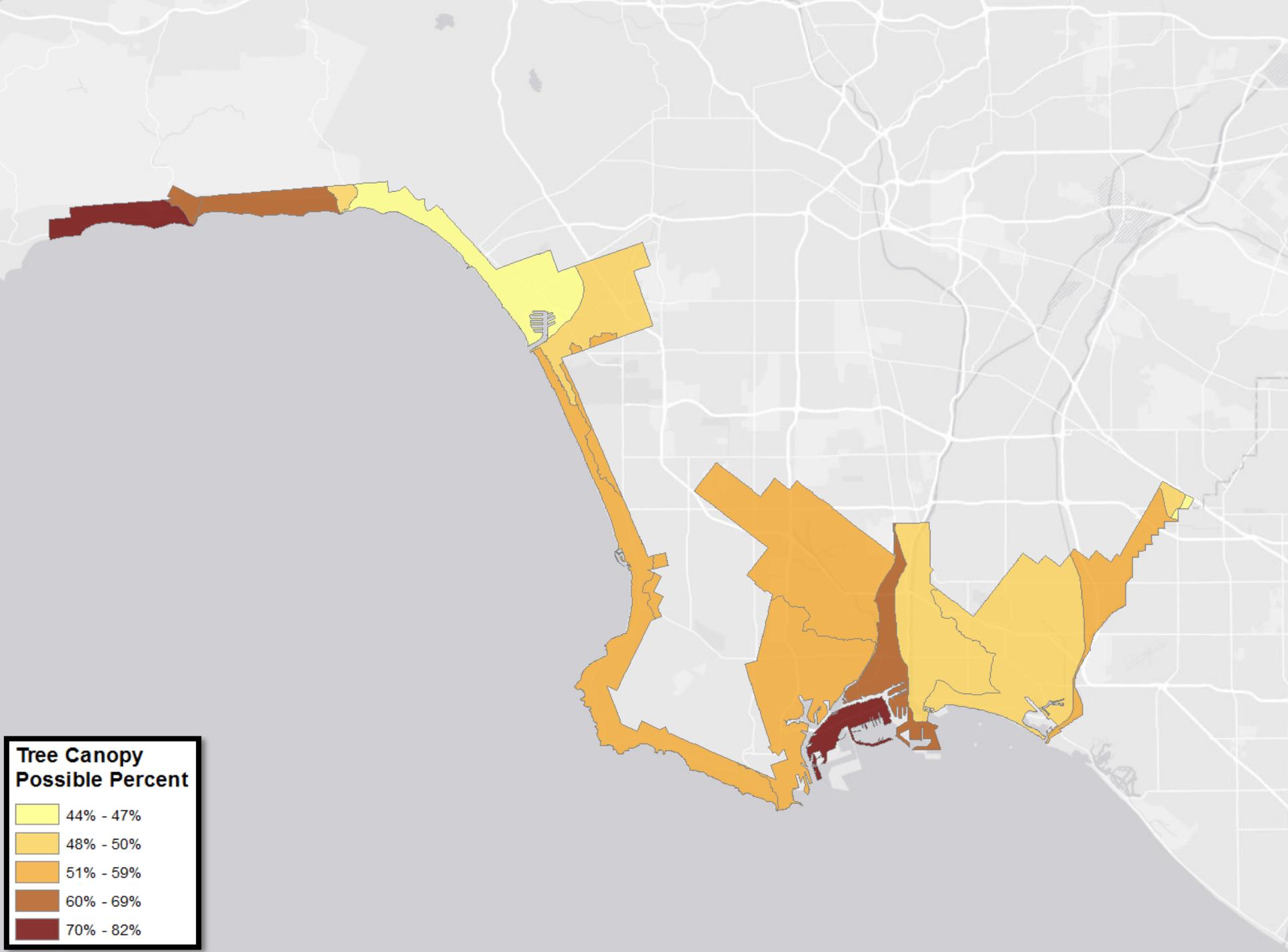


Santa
Monica
Airport

Marina
Creek

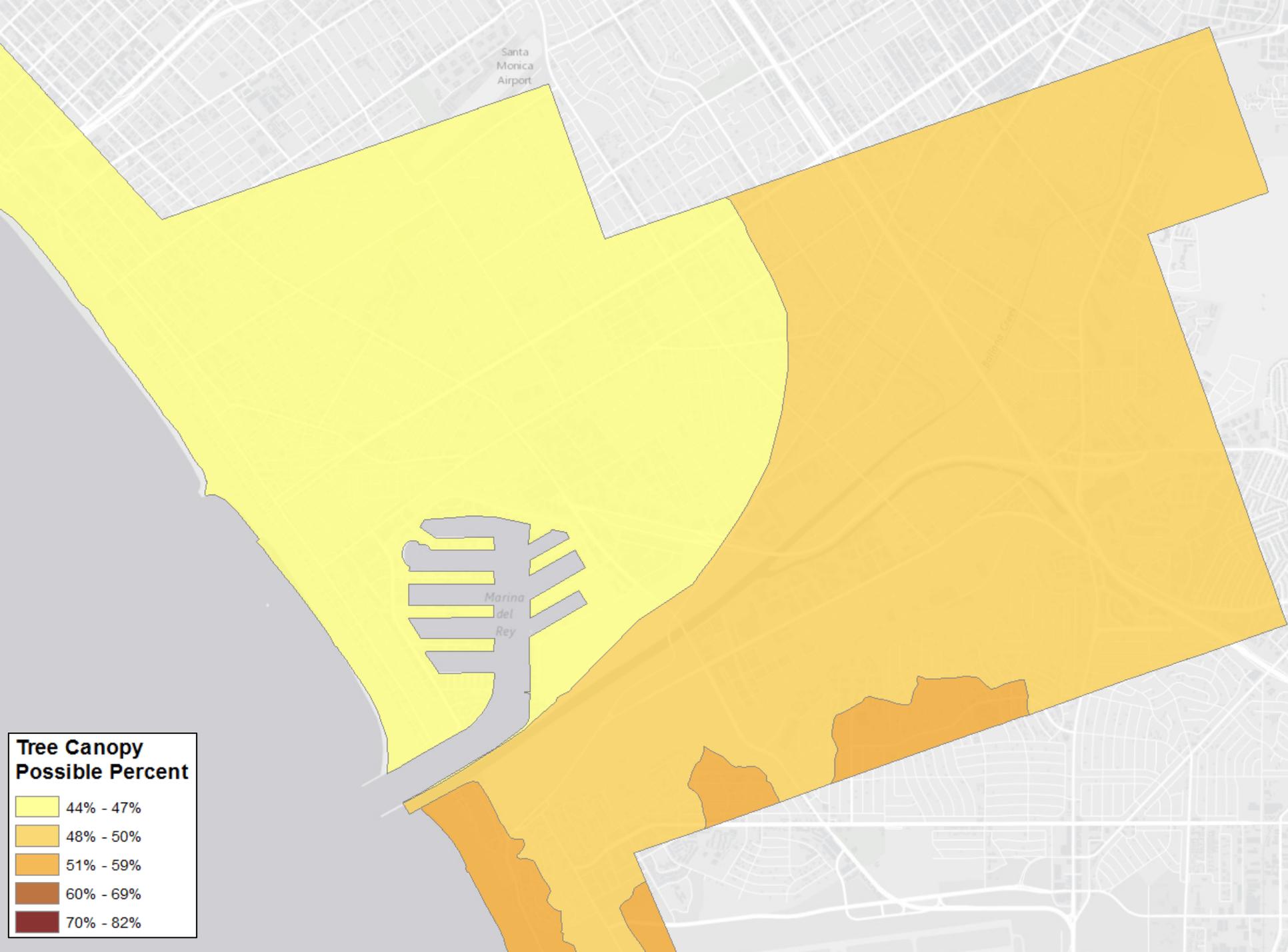
Marina
del
Rey





**Tree Canopy
Possible Percent**

- 44% - 47%
- 48% - 50%
- 51% - 59%
- 60% - 69%
- 70% - 82%

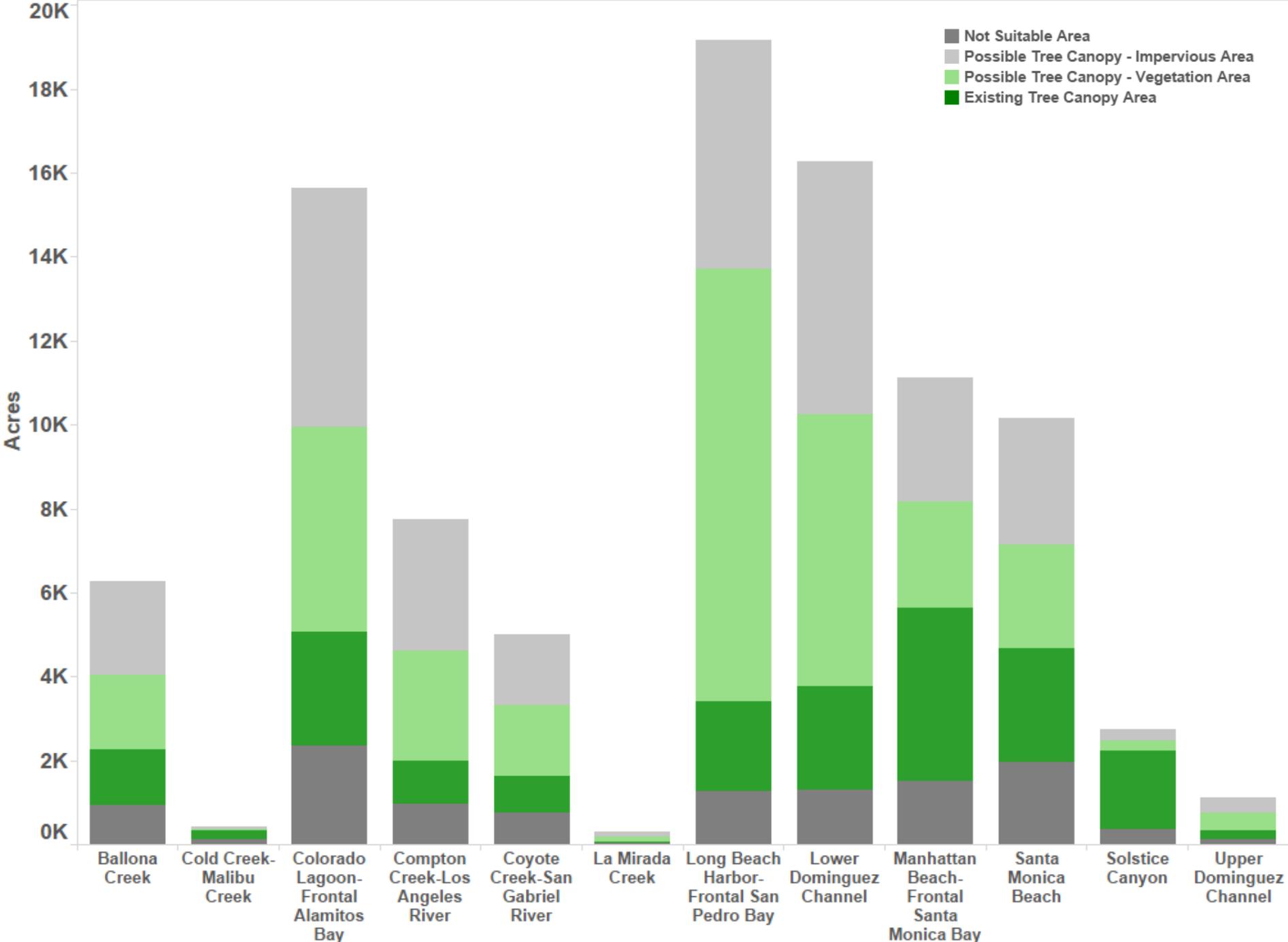


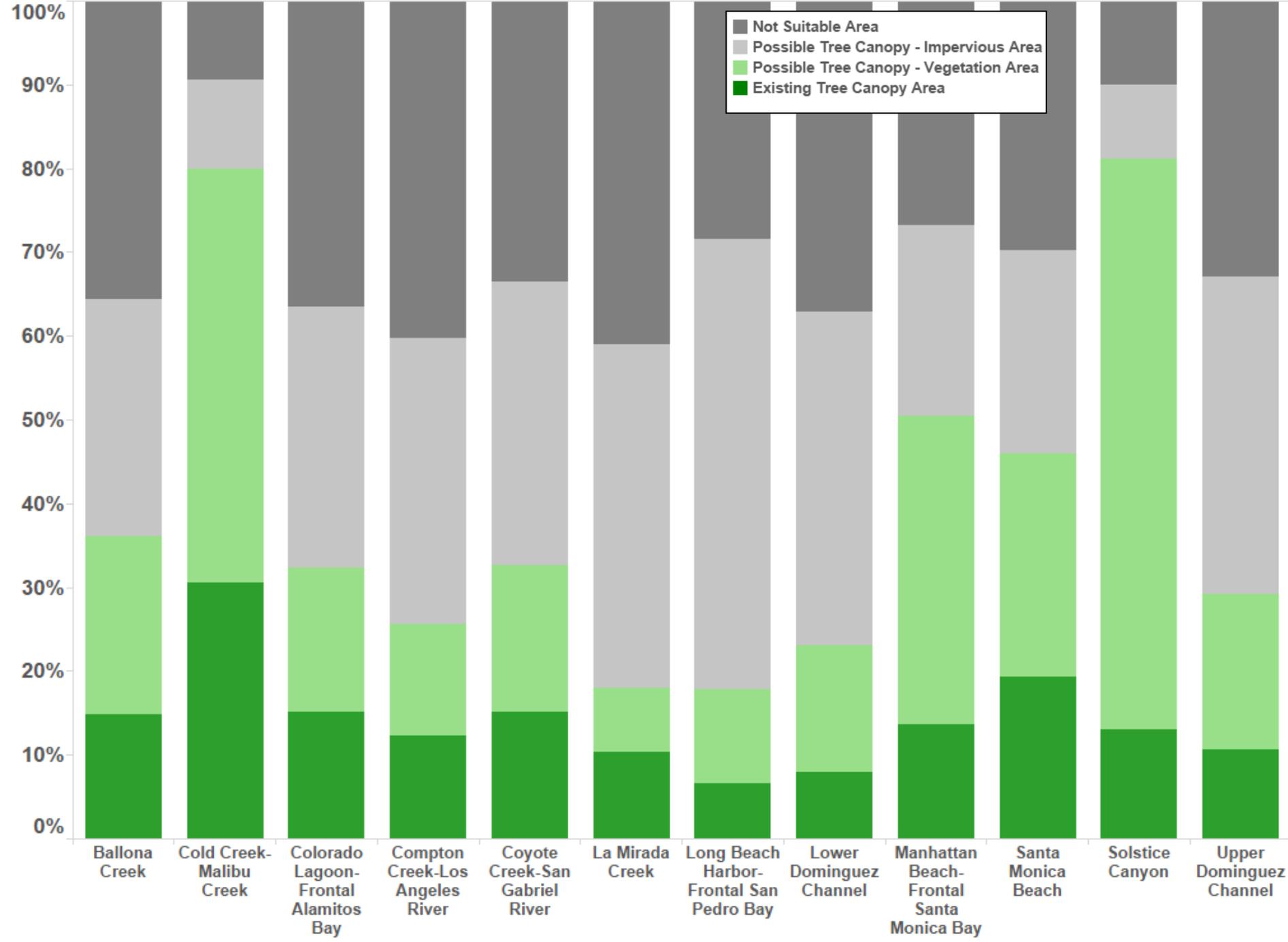
Santa
Monica
Airport

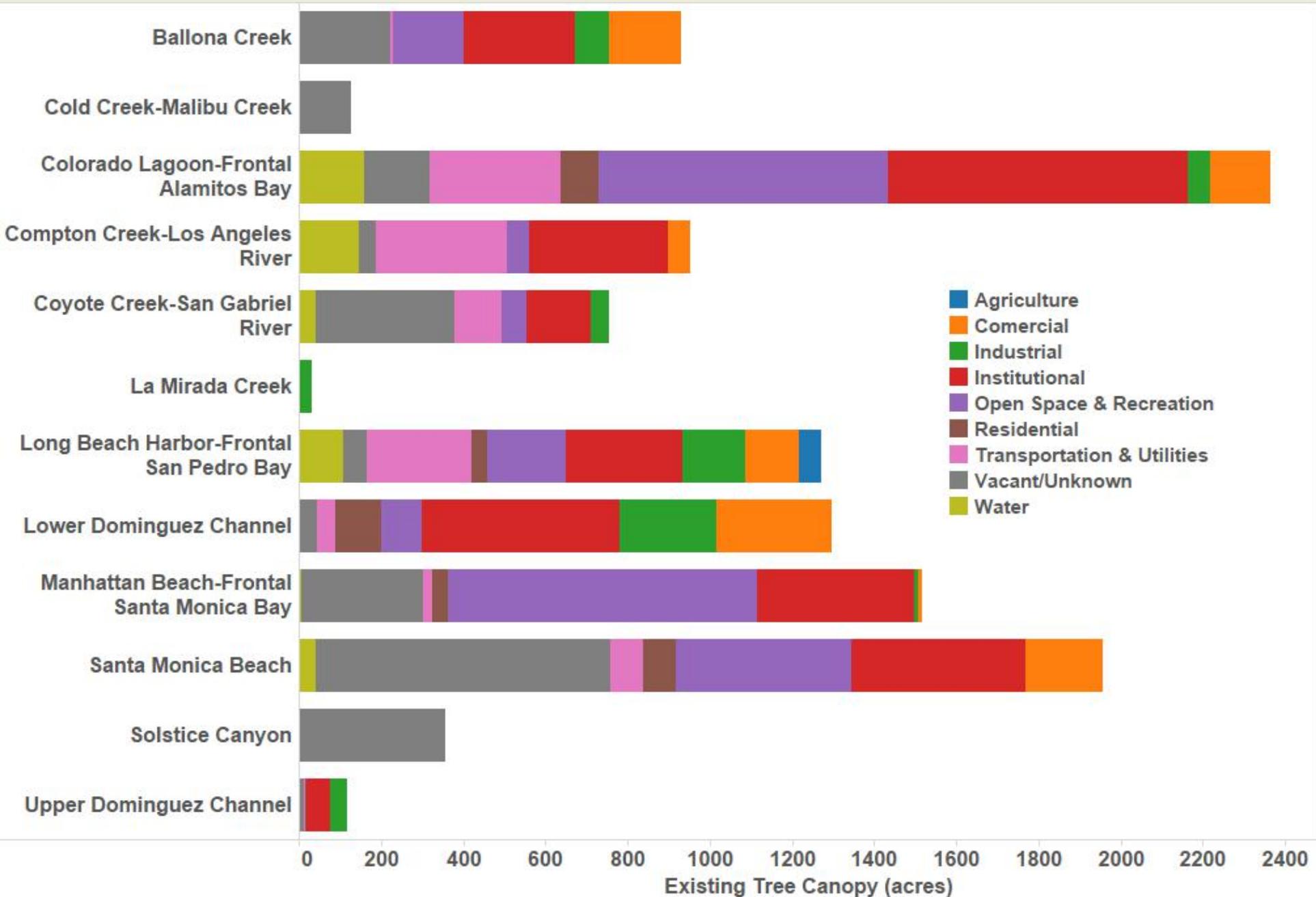
Marina
del
Rey

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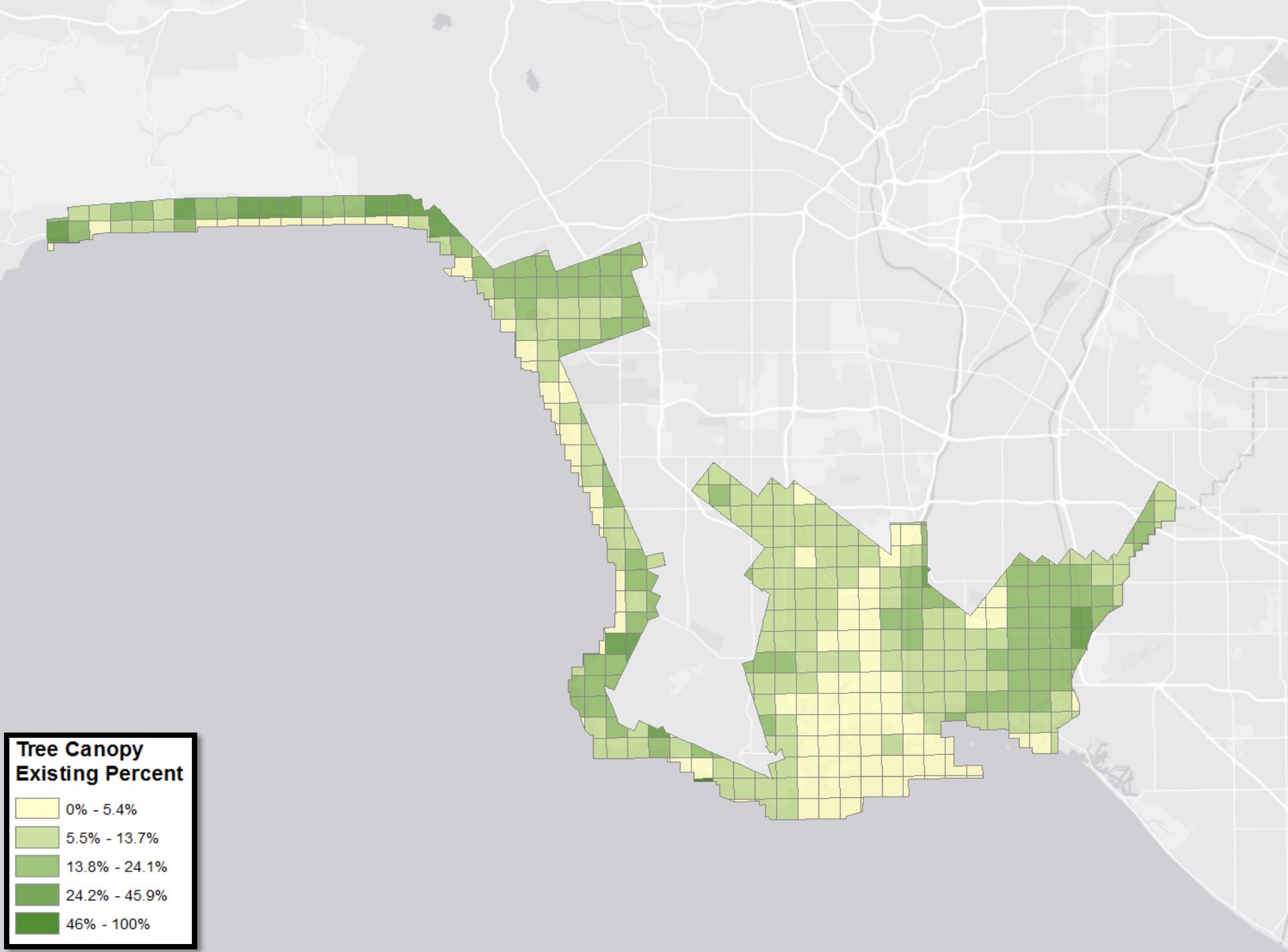






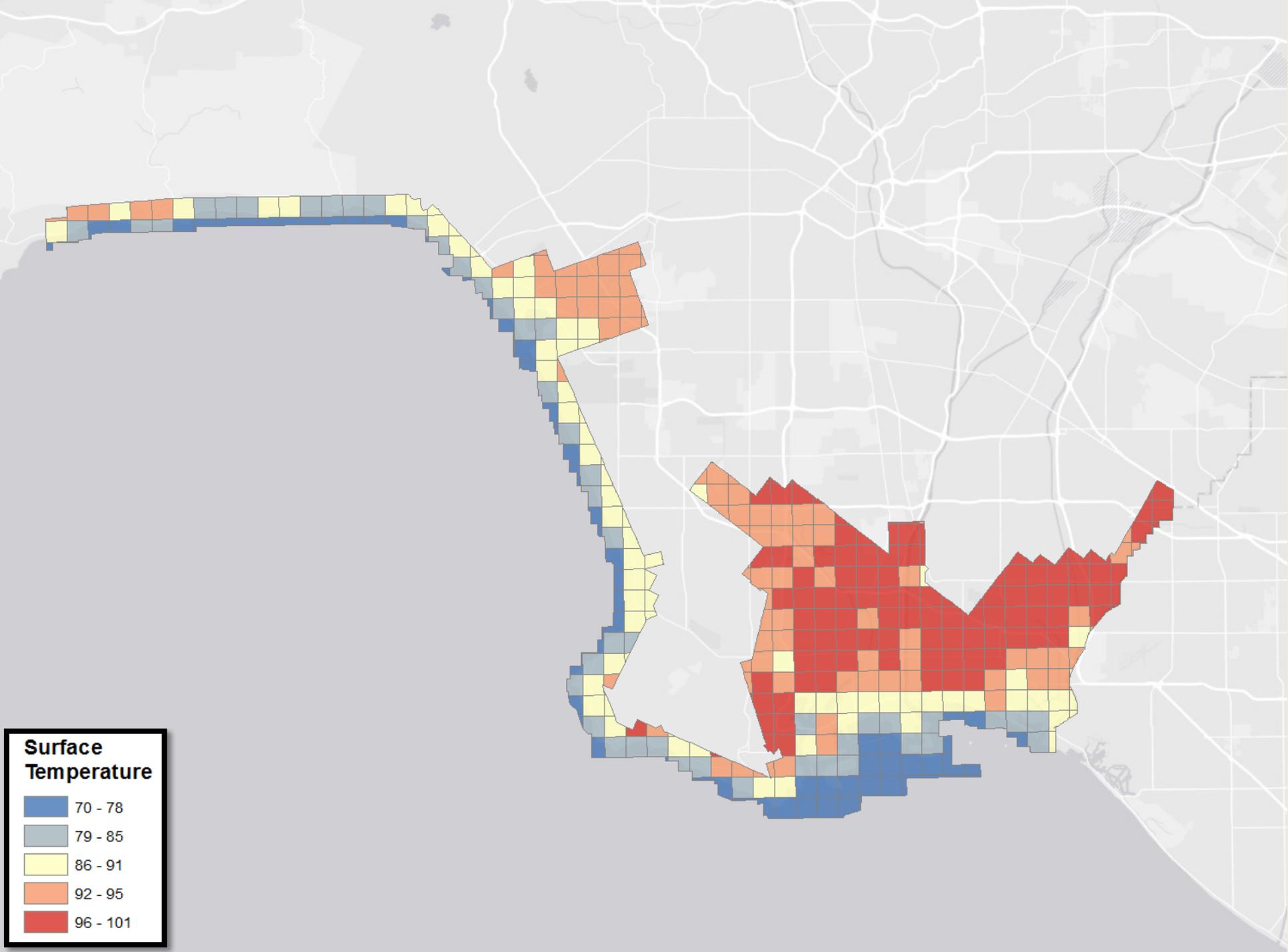
SURFACE TEMPERATURE

Tree Canopy Metrics



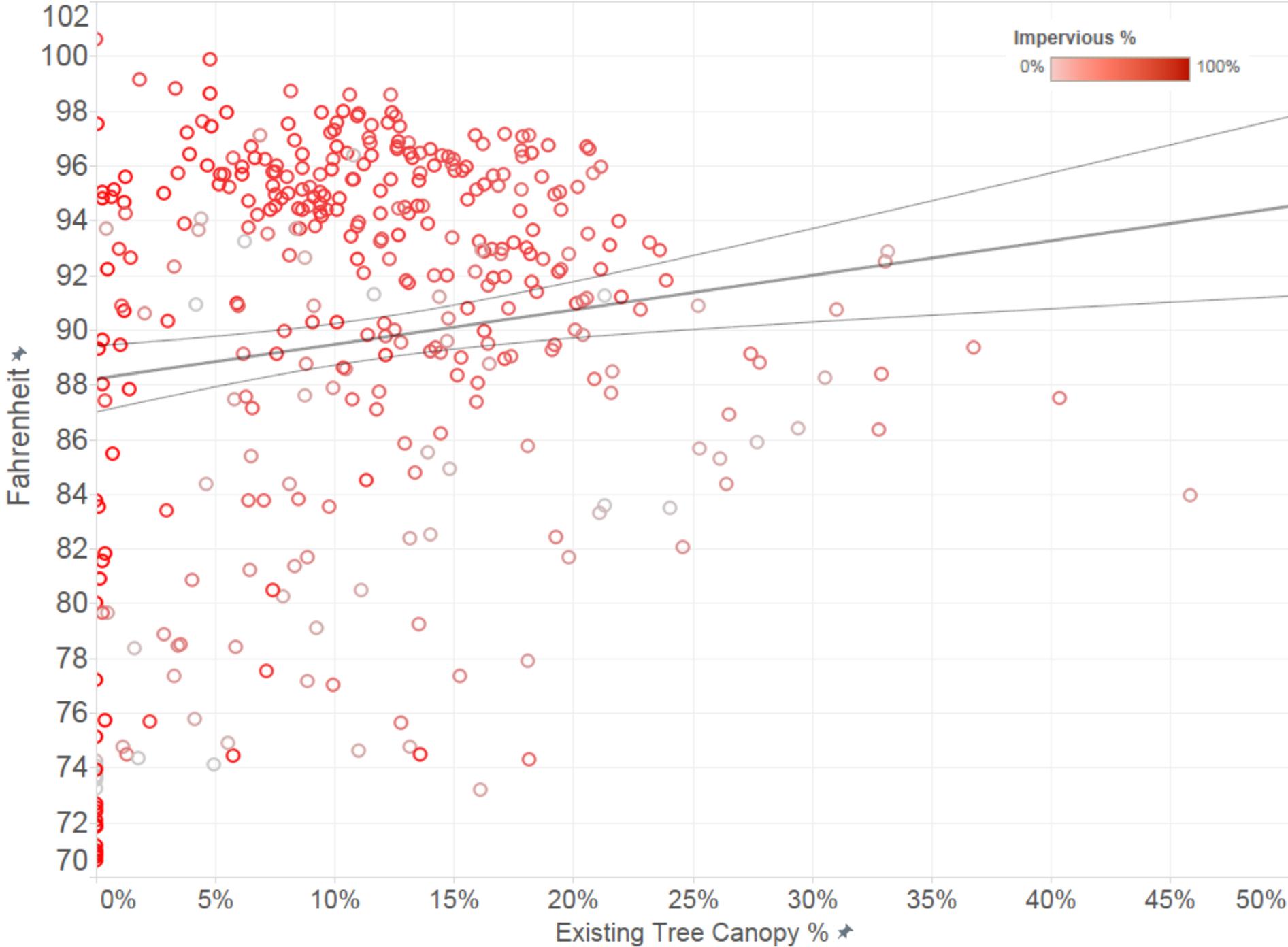
**Tree Canopy
Existing Percent**

- 0% - 5.4%
- 5.5% - 13.7%
- 13.8% - 24.1%
- 24.2% - 45.9%
- 46% - 100%



**Surface
Temperature**

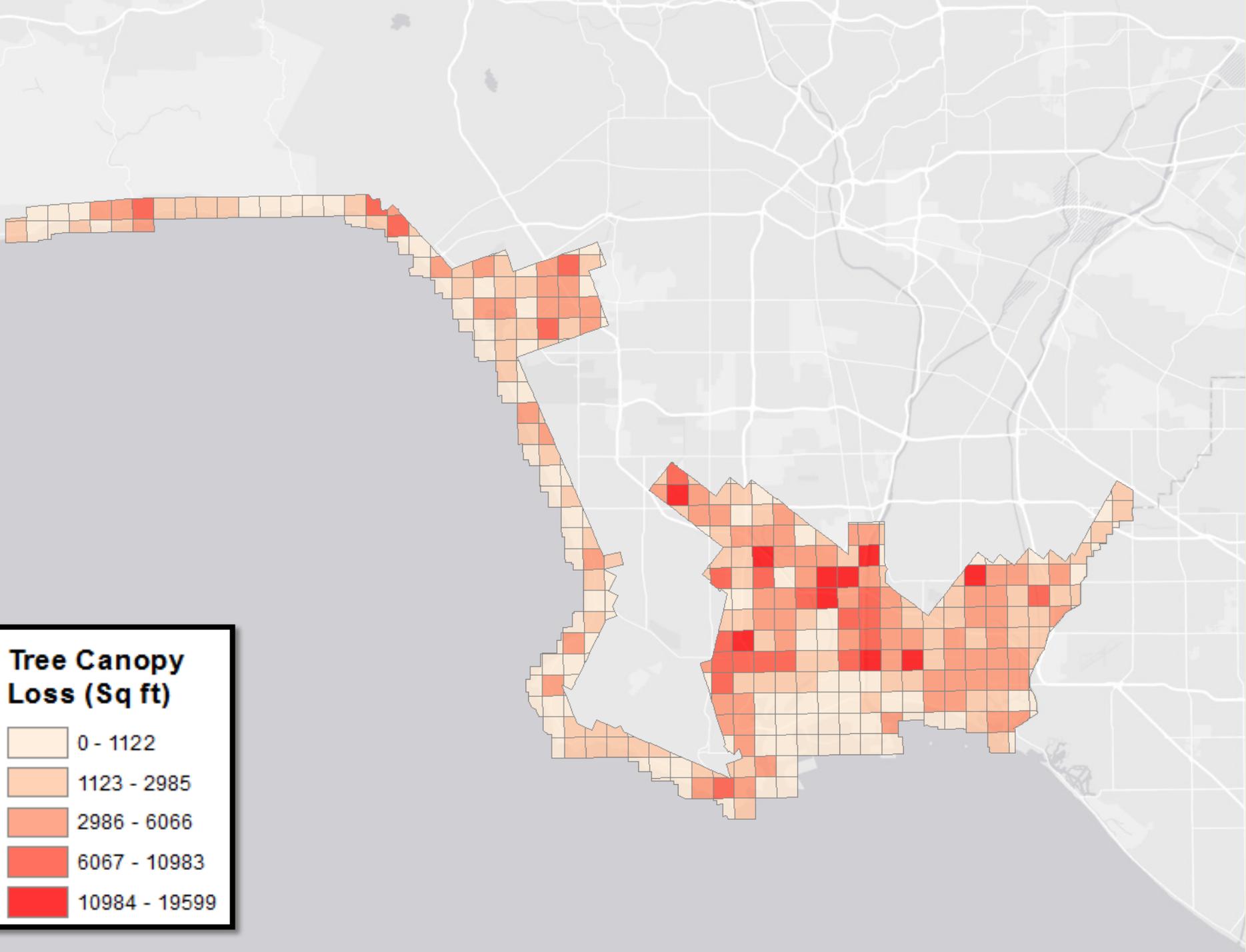
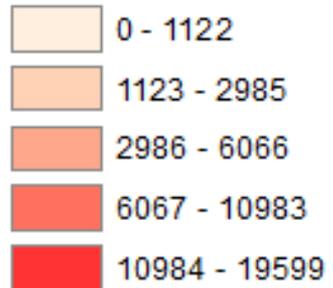
- 70 - 78
- 79 - 85
- 86 - 91
- 92 - 95
- 96 - 101



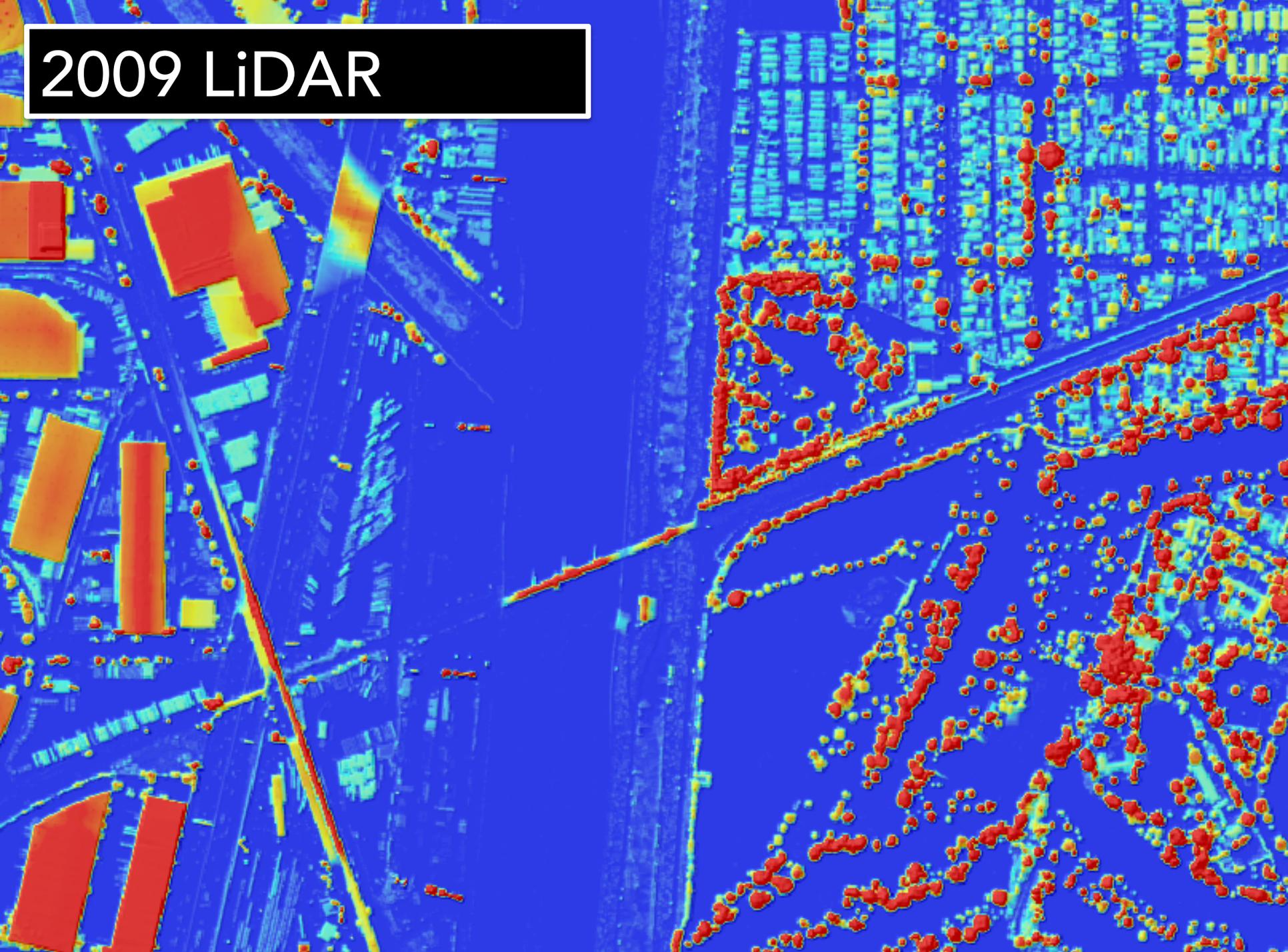
TREE CANOPY CHANGE

Monitoring

**Tree Canopy
Loss (Sq ft)**



2009 LiDAR



2014 Imagery





DOMINGUEZ ST

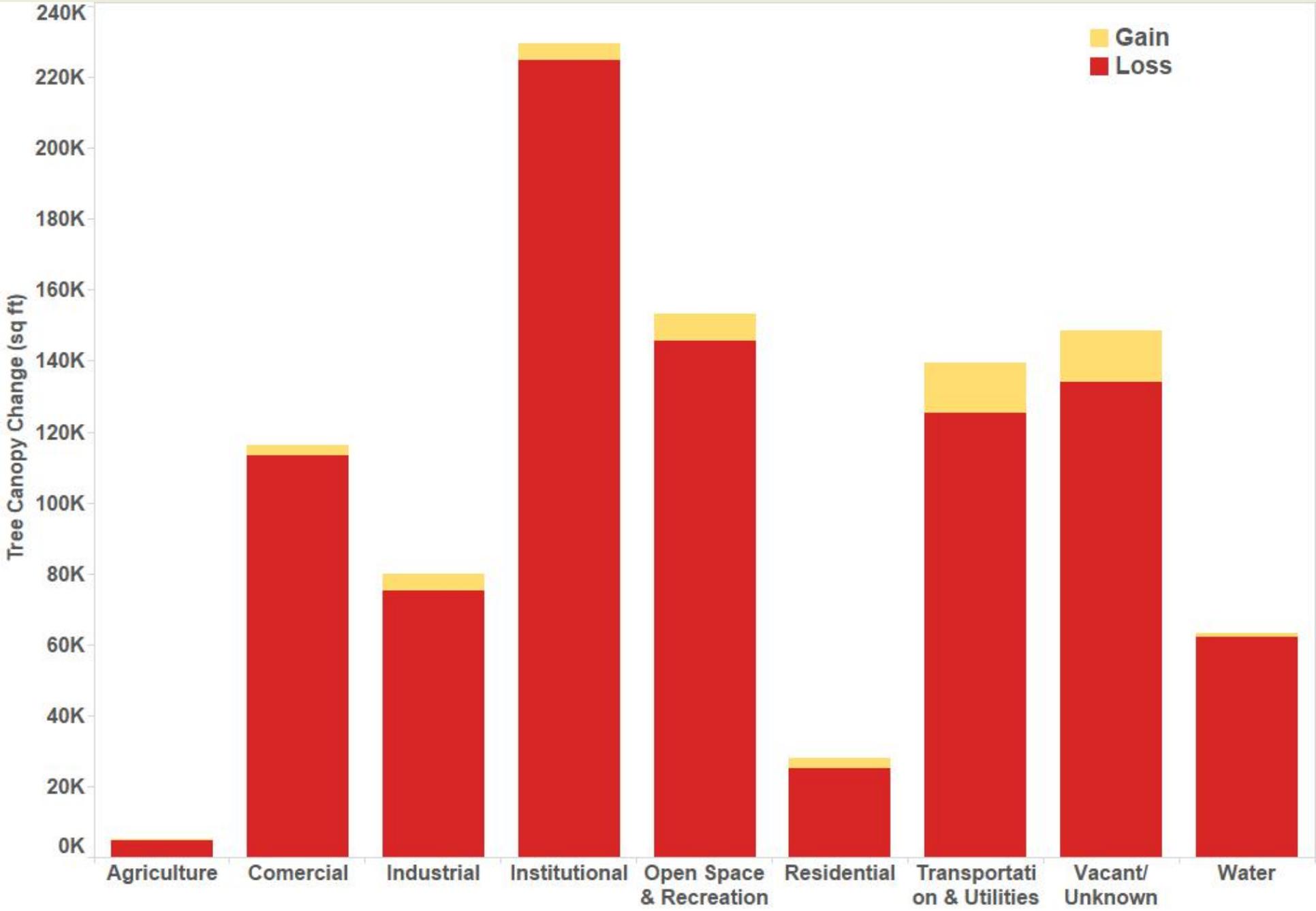
I-710 S
I-710 N

LONG BEACH FWY 710

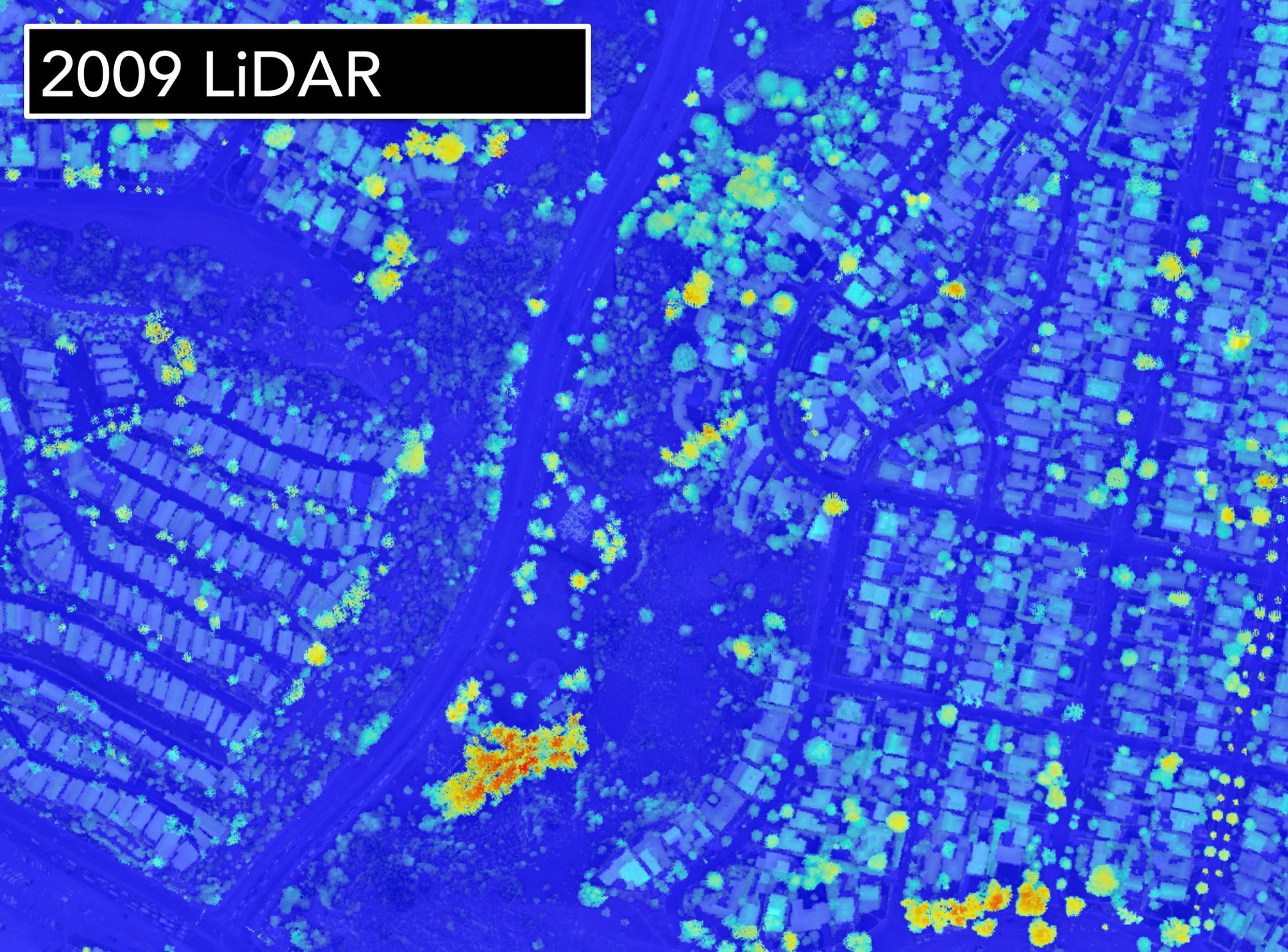
HOLLY AVE
GULF AVE
BROOK AVE
LAGATE AVE
CRENSHAW AVE
PACIFIC AVE

W 81ST ST
W 82ND ST

Change



2009 LiDAR



2014 Imagery

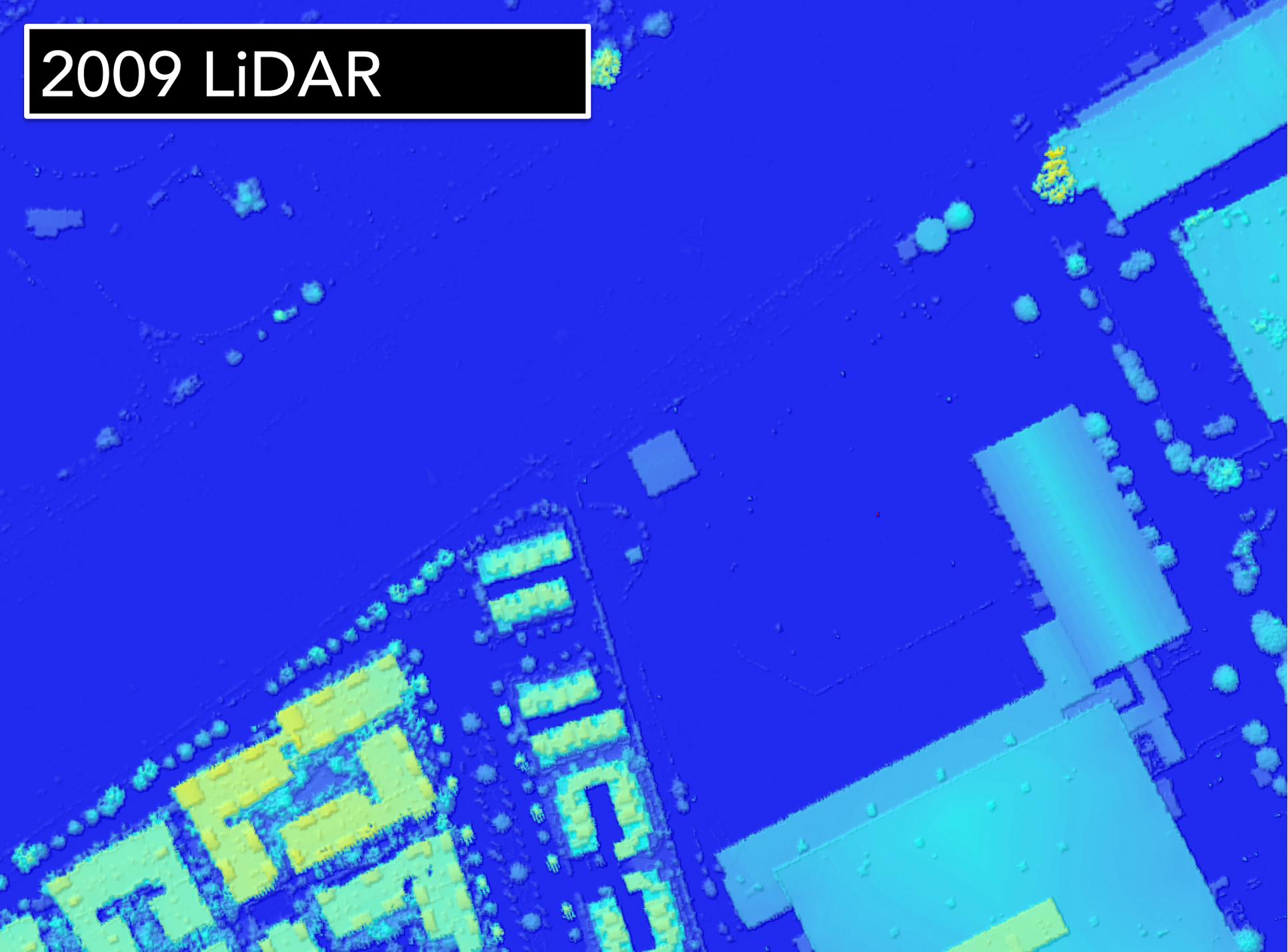




Change

	Gain
	Loss
	No Change

2009 LiDAR



2014 Imagery





Change

-  Gain
-  Loss
-  No Change

Similar Projects In Other Regions Inform Research & Practice...

- **Prioritizing preferable locations** for increasing urban tree canopy in New York City.
- The relationship between **tree canopy and crime** rates across an urban–rural gradient in the greater Baltimore region.
- Roles of urban tree canopy and buildings in **urban heat island effects**.
- **Urban tree canopy goal setting**: A guide for Chesapeake Bay communities.
- **Urban tree canopy and asthma**, wheeze, rhinitis, and allergic sensitization to tree pollen in a New York City birth cohort.
- Using geospatial tools to assess the urban tree canopy: **Decision support for local governments**.

Next Steps Locally...

- Conducting a more in depth analysis on tree canopy change in relation to market segments
- Extending the assessment to the entire County
- Working with potential collaborators to determine best ways to use the data as a foundation for new projects

Thank you!



For more information:
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(310) 338-7443

www.cures.lmu.edu/our-programs/research/